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A NORMATIVE MODEL OF THE IDEAL
QUALITIES, CHARACTERISTICS, AND
BACKGROUND OF THE SENIOR AIR FORCE
CIVILIAN LOGISTICIAN

THESIS

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AFIT/GLM/LSM/88S-27

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AND BACKGROUND OF THE SENIOR AIR FORCE CIVILIAN LOGISTICIAN

THESIS

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Ralinda Bozelli Gregor

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Abstract

This study continues four years of AFIT research on the senior Air Force logistician. The purpose of this *thesis* ~~study~~ was to develop a weighted model of the qualities, characteristics, and background of the ideal senior Air Force civilian logistician and to compare the population of GM-15 civilian logisticians to that model.

A Delphi survey of 30 expert senior logisticians was used to develop the first normative model of the ideal requirements for the senior civilian logistician. This descriptive model was then weighted by another panel of 44 expert logisticians. A census of GM-15 logisticians was conducted to validate the model and gather data about the qualifications of current senior civilian logisticians. The GM-15s were then evaluated using the weighted model's 100 point scale.

On the average, the GM-15s did not meet the model criteria very well, with scores ranging from 39.6 to 91.1 and a mean score of 67.3. The top twenty GM-15s appear highly qualified based on their model scores.

The products of this research are of value both to those interested in civilian logistician career development and to those interested in the management of logistics systems. The model provides relevant career guidance to

civilian logisticians. The empirical data describes 78 percent of the GM-15 population in detail. The comments of a number of expert logisticians are documented and provide valuable insight about the thoughts and opinions of the senior Air Force leadership.

A NORMATIVE MODEL OF THE IDEAL QUALITIES, CHARACTERISTICS, AND BACKGROUND OF THE SENIOR AIR FORCE CIVILIAN LOGISTICIAN

I. Introduction

General Issue

The responsibilities of the senior military logistician are becoming more complex. Dr. James P. Wade, Jr., the Assistant Secretary of Defense for Acquisition and Logistics, believes the job of providing logistics support will become more difficult as defense budget cuts continue (27:3). Fiscal year 1988 defense appropriations were cut by $13 billion, while the proposed defense budget for 1989 was cut $33 billion by the Pentagon before it even reached Congress (10:3). These increased fiscal constraints have also increased the pressure on logisticians to find ways to reduce costs. The amount of money spent on logistics support is staggering with over half the total weapons system life cycle costs now attributed to logistics (27:3). The commander of Air Force Logistics Command (AFLC), General Alfred G. Hansen, has recognized this heavy burden on the logistician. In his first year of command, General Hansen instituted a "quality revolution" within AFLC to encourage people to work smarter and "do it right the first time"

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(16). Dr. Wade believes comprehensive cost effectiveness is hindered by the fragmentation of the logistics system; a more integrated approach to logistics management is needed (27:3).

Dr. Wade believes that integrated approach can only be achieved by professional logisticians who understand the full spectrum of logistics activities and their interrelationships:

> The solution is to professionalize the logistician. . . . To achieve the necessary level of professional-ism, DOD must set up a well-defined professional devel-opment program for logisticians that will produce se-nior personnel capable of functioning effectively in a wide range of top-level logistics assignments [27:4].

This same view has been expressed by Air Force leaders as well. Lieutenant General Leo Marquez, former Deputy Chief of Staff for Logistics and Engineering, has suggested that logisticians must understand how the different logistics disciplines contribute to the whole logistics system. He has cautioned the Air Force against developing logistics specialists (17:2). More recently, Mr. Lloyd K. Mosemann II, the Deputy Assistant Secretary of the Air Force for Logistics, has stressed the need for Air Force logisticians to become professionals. In a 1988 editorial published in the Air Force Journal of Logistics, he urged logisticians to become professionals by developing a "broad gauged" back-ground in the full spectrum of logistics through personal study and involvement in professional logistics organiza-

tions. He predicted that this broad background in logistics will become even more critical as advances in information management expand the responsibilities of logisticians (19:6-7).

These same concerns were shared by those who initiated the career development program for Air Force civilian logisticians. The Logistics Civilian Career Enhancement Program (LCCEP) has always focused on career development through a wide variety of training programs. One of its primary goals has been to help logisticians gain the experience they need to assume senior positions (14:1-2). General Marquez described the program's history and goals in his reply to the second round Delphi Survey of this research effort:

> The early history of LCCEP [was] painful, as so much resistance to the concept existed and so many obstacles were raised to its implementation. What we had was a career progression pattern which was essentially random, with chance playing more a part in professional development than purpose. There was not then and, now only [in] 'rudimentary form', any attempt to describe what a senior 'loggie' should have under his belt in terms of job experience, training, or education. The typical civilian, then, tended to spend his entire career in one discipline, i.e., maintenance, supply, material management, distribution. They are, as I have described them, ten feet tall and two inches wide. The robust six footer is rare -- very rare [see Appendix D for further comments].

The LCCEP has tried to define the future academic and technical requirements for civilian logisticians. These requirements are changing with the rapid advances in technology and information systems. In 1987, the LCCEP began the "Logistician of the 1990's" project to define the train-

ing and development requirements for the logistics leaders of the future (22). The results of this project have been too general thus far to provide specific guidance to aspiring senior civilian logisticians.

Problem Statement

In spite of such widespread concern over logistician career development, the Air Force lacks definitive direction for civilian logistician career development. No consensus definition exists to describe what type of individual the Air Force wants in senior civilian positions. Those who aspire to these positions are faced with conflicting career development guidance. The day-to-day operations of logistics encourage specialized technical expertise at lower and middle levels, yet senior positions demand broad experience and management expertise.

Therefore, this research was initiated to describe the characteristics, qualities, and background the senior Air Force leadership wants in its senior civilian logisticians, model those components, and determine how well current senior civilian logisticians fit that model.

Prior Research

Prior AFIT research about logistician career development and modeling has focused mainly on the senior military logistician. In 1985, Captain Allan D. Overbey developed a model based on expert opinion which described the qualities, characteristics, and background of the senior military

logistician. His findings suggested that senior Air Force military logisticians should be multidisciplined and have a broad understanding of logistics (15:127-128). In 1986, Captain Adelle R. Zavada restructured Overbey's model and assigned weightings to its various components, again based on expert opinion. She also compared practicing senior military logisticians to the model and found that the top 20 percent of these Air Force colonels were well qualified logisticians, based on their "fit" to the model (20:128).

While most substantive research has dealt with the senior military logistician, some research has investigated the characteristics of senior civilian logisticians. In 1985, Dawn L. Wilson studied senior civilian logisticians in the 346 job series, Logistics Management Specialist, and discovered that the majority (57 percent) are generalists (19:47). Donald W. Nancarrow tested Zavada's military model for applicability to civilians in 1987. His efforts suggested the military model, referred to as the AFIT Military Model, may also be valid for civilian logisticians, in its general form (20:154).

This study built upon the previous AFIT research and developed a new model of the senior Air Force civilian logistician.

Research Objectives

To determine what type of senior civilian logistician
is most desired by the senior Air Force leadership, the
following research objectives were developed:

1.   Determine if a weighted model can be developed and
validated to describe the qualities, characteristics, and
background of the ideal senior Air Force civilian
logistician.

2.   Determine how well current senior civilian
logisticians fit the model.

Research Questions

To meet the objectives of this study, the following
investigative questions were proposed:

1.   Can the top two levels of the model Nancarrow
suggested be verified by expert logisticians?

2.   What specific third level elements should be added
to the model?

3.   What weightings do expert logisticians assign to
the model dimensions, categories, and elements?

4.   Do grade GM-15 senior civilian logisticians believe
the dimensions and categories of the model are valid?

5.   How well do grade GM-15 senior civilian logisti-
cians meet the model criteria? Are there differences among
them that can be explained by job series or other factors?

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6. What are the characteristics of grade GM-15 senior civilian logisticians who score very well against the model? What are the characteristics of those who score very poorly?

Scope and Limitations

This research was limited to senior Air Force civilian logisticians. For the purpose of this study, the senior civilian logistician was defined as GM-15 and Senior Executive Service (SES) civilians serving in logistics job series. These job series are those that have been classified as exclusive or potential by the LCCEP (10:1-2). All individuals serving in exclusive job series positions and all LCCEP registrants serving in potential job series positions were included. This classification system was used so this research would survey the opinions of career oriented logisticians.

The model development and weighting were based on the opinions of a purposive judgment sample of expert senior logisticians. Every effort was made to query experts from a wide variety of backgrounds. It is possible the survey of a different group of experts could lead to different conclusions. Therefore, to mitigate this situation, the model was validated by a census of the GM-15 logistician population.

It is possible that the validation survey was not sent to all GM-15 logisticians in the target population. This researcher had difficulty obtaining the names of all GM-15 logisticians. An error in the electronic transmission of

GM-15 logistician names and addresses from the Air Force
Civilian Personnel Management Center to Wright-Patterson AFB
led to the initial omission of 21 GM-15s in the 301 and 346
job series. A second listing was obtained which included
these individuals. They were surveyed, and their responses
were included in this research. Based on the information
provided in ATLAS database summaries used in the initial
stages of this research, it appears that only 21 individuals
were omitted from the listing of GM-15 logisticians.
Furthermore, the validation survey results are very robust
in their rejection of the null hypotheses. The inclusion of
additional responses would be unlikely to change the
conclusions derived from the results of this research.

Definitions

The following key terms are defined:

1. Expert (logistics): A professional logistician who
is prominent within the field and familiar with Air Force
logistics (20:6).

2. Logistician: An individual whose profession or
specialty is performing one or more of the prime management
functions (planning, organizing, coordinating, directing,
and controlling) in a logistics discipline or functional
area or who is responsible for ensuring logistics processes
are completed in support of an organization's activities
(26:304).

3. Logistics Disciplines: Major groups of related activities which encompass many logistics functional areas. They include acquisition, combat, international, retail (base level), and wholesale logistics (20:7).

4. Logistics Functional Areas: The different expertise and actions necessary to carry out the full spectrum of military logistics. In this study it is limited to engineering, logistics planning, maintenance, procurement, supply, transportation, and system, item, or program management (20:7).

5. Military Logistics: A fully integrated system of processes supporting the military operations of an organization, including combat. For the purposes of this study it includes the traditional disciplines and functional areas listed above (20:7).

6. Senior Civilian Logistician: GM-15 and Senior Executive Service (SES) civilians serving in logistics job series. These job series are classified as either exclusive or potential by the LCCEP (14:1-2). All individuals serving in exclusive job series positions (346, 1104, 1152, 1670, 2001, 2003, 2005, 2010, 2030, 2032, 2050, 2101, 2102, 2130, 2131, 2132, 2134, 2135, 2144, 2150, 2151) and all LCCEP registrants serving in potential job series positions (301, 340, 343, 345, 1101, 1150, 1601, 1640, 1910, 1960) were included.

7. Senior Military Logistician: Officer in the rank of colonel or higher who serves as a logistician.

Potential Contributions

The results of this research should prove very valuable in the area of civilian logistician career development. A model describing the ideal characteristics of senior civilian logisticians could help the Air Force identify the types of individuals who should fill senior positions. Such a model could also serve as a personal career development guide for civilian logisticians who aspire to senior positions. Finally, the model will help Air Force leaders determine whether existing career development programs are successful in producing senior civilian logisticians who come close to the "ideal."

Another contribution of this research is the wealth of information about civilian logistician professional development provided through the opinions of numerous senior logistics experts. This research taps some of the best logistics minds available today. The opinions of these experts are coalesced into a weighted model of the ideal senior civilian logistician. Additionally, the opinions of these experts are reflected in their comments which are presented in their entirety in Appendices B, D, and F.

Summary and Overview

This chapter outlined the increasing complexity and importance of logistics in the Air Force of today and the future. The research previously conducted on the background requirements of the senior civilian logistician was summarized, and the research objectives and questions as well as important definitions were also presented. Finally, four potential contributions were suggested.

The following chapters will more thoroughly describe this study of the background requirements of the ideal senior civilian logistician. In Chapter II an overview of previous research in this area is presented. Chapter III delineates the methodology used in this research effort. In Chapter IV, the results of this research effort are presented and analyzed. In Chapter V, answers to the research questions are summarized and recommendations for future action and research are presented.

II. Literature Review

This review of the literature is intended to give the reader an overview of the major works pertinent to the research topic. The review provides an update to the information presented in recent AFIT masters theses by Overbey, Wilson, Zavada, and Nancarrow. For a more detailed review, the interested reader is referred to the specific literature reviews contained in each of those four AFIT theses.

The following review begins with a discussion of the debate over whether logisticians should be generalists or specialists. Next, the key research in the development of descriptive models of the senior military and civilian logistician are summarized. Finally, the civilian logistician career development guidance currently in effect is reviewed.

Generalist vs. Specialist

Discussion as to whether logisticians should be generalists or specialists gained prominence when Lieutenant General Leo Marquez advocated developing logistics generalists with broad knowledge of the entire logistics process (17:2). Recent research has investigated whether logisticians are, in fact, generalists.

In Who is the Senior Civilian Air Force Logistician?, Dawn Wilson examined senior civilian logisticians in the 346

job series (28:31). Her goal was to determine if senior civilians were generalists or specialists. She based her classification on factors such as job experience, education, training, Professional Military Education (PME), Professional Continuing Education (PCE), professional certification, and active membership in professional logistics organizations (28:34). She performed a census of the logisticians in the 346 job series. She then convened a panel of five experts who classified each respondent as either generalist or specialist, according to criteria established for each of the above factors. Of the 60 respondents, 57 percent were classified as generalists (28:46-47).

Wilson looked at the individual factors to see which ones had significant influence on the classification. Generalists had less time in grade, suggesting that specialists were not being promoted as rapidly. Of the five logistics functions she defined -- maintenance, supply, transportation, logistics plans, and contracting -- generalists had experience in an average of 2.73 functions. Specialists had experience in 1.68 functions. She found geographic immobility to be a characteristic of both groups, but generalists had served in 2.18 locations compared to 1.54 for specialists (28:85). Fifty-six percent of the generalists were active members in professional logistics organizations, compared to 27 percent of the specialists (28:87).

To determine what qualities were most important in these senior positions, Wilson asked each respondent to weight a list of criteria they would use to evaluate someone who might replace them in their present position. "Inherent management" received the top rankings -- 38.6 percent of the total weight for SES, 29 percent for GM-15 generalists, and 23.6 percent for GM-15 specialists. Specialists felt experience in one logistics function was most important, weighting it 29.7 percent. Generalists and SES valued job experience in more than one function, weighting it 18.3 and 15.7 percent, respectively (28:131). When the respondents were asked what education, training, and experience best prepared them for their senior logistics management positions, their top answer was materiel management experience in depot supply followed by formal education (28:106).

Although Wilson found that over half the civilians in the Logistics Management job series were generalists, Lieutenant Colonel Michael E. Zettler found specialization to be the norm for Air Force officers in the logistics fields (maintenance, supply, transportation, and logistics plans). He interviewed several Air Force Military Personnel Center officials and concluded that the logistics career development policies and practices actually supported specialization. He found it was common for officers in logistics functions to be promoted into jobs with increasing levels of specialization (30:11). Not only did officers

tend to remain in one logistics functional area, they also spent much of their career in one mission element or major command (30:12).

Zettler advocated a career development program that would encourage more generalist development than the current policies did. However, generalist elitism was to be avoided; the technological complexity of logistics support systems made specialists valuable to mission support as well (30:61).

While career development programs for military logisticians proposed by the Air Staff at one time targeted a 20 percent goal for generalist development, no such guidelines exist for civilian logisticians (30:34). A mixture of specialists and generalists may be needed at the senior levels of the civil service logistics hierarchy. However, percentages have not been specified by the LCCEP. Regardless of the mixture of specialists and generalists required, a model to describe the ideal senior civilian logistician should represent both groups if it is to be a valid career development tool.

The AFIT Model

Military Model. The generalist versus specialist debate prompted Captain Allan D. Overbey's investigation into the characteristics and background required by Air Force senior military logisticians. For his masters thesis, A Normative Model of the Essential Qualities,

Characteristics, and Background Requirements for a
Professional Senior Military Logistician, Overbey conducted
a Delphi survey of 20 expert logisticians. His goal was to
obtain expert consensus on the characteristics that should
be included in a model describing the ideal senior military
logistician (23:61-62). He used the Delphi method as a
means to obtain expert consensus. The Delphi method is a
controlled discussion of an issue using a written question-
naire. The Delphi participants remain anonymous, but their
responses are communicated to the other group members
through iterative, controlled feedback. The result of this
process is a group response that reflects the mean of the
individual responses (12:16).

Based on preliminary interviews and information
obtained from the Delphi survey results, Overbey developed
the model of the senior military logistician shown in Figure
1 (23:131). The results of his study indicated that senior
military logisticians should be both leaders and managers.
These senior military logisticians should have a postgrad-
uate education in logistics management and completion of the
AFIT logistics management masters program was seen to be
highly desirable (23:125) Overbey's experts recommended
Professional Continuing Education as necessary to enhance
the logistician's technical competency and Professional
Military Education to develop his understanding of the
entire national defense system (23:126-127). The experts
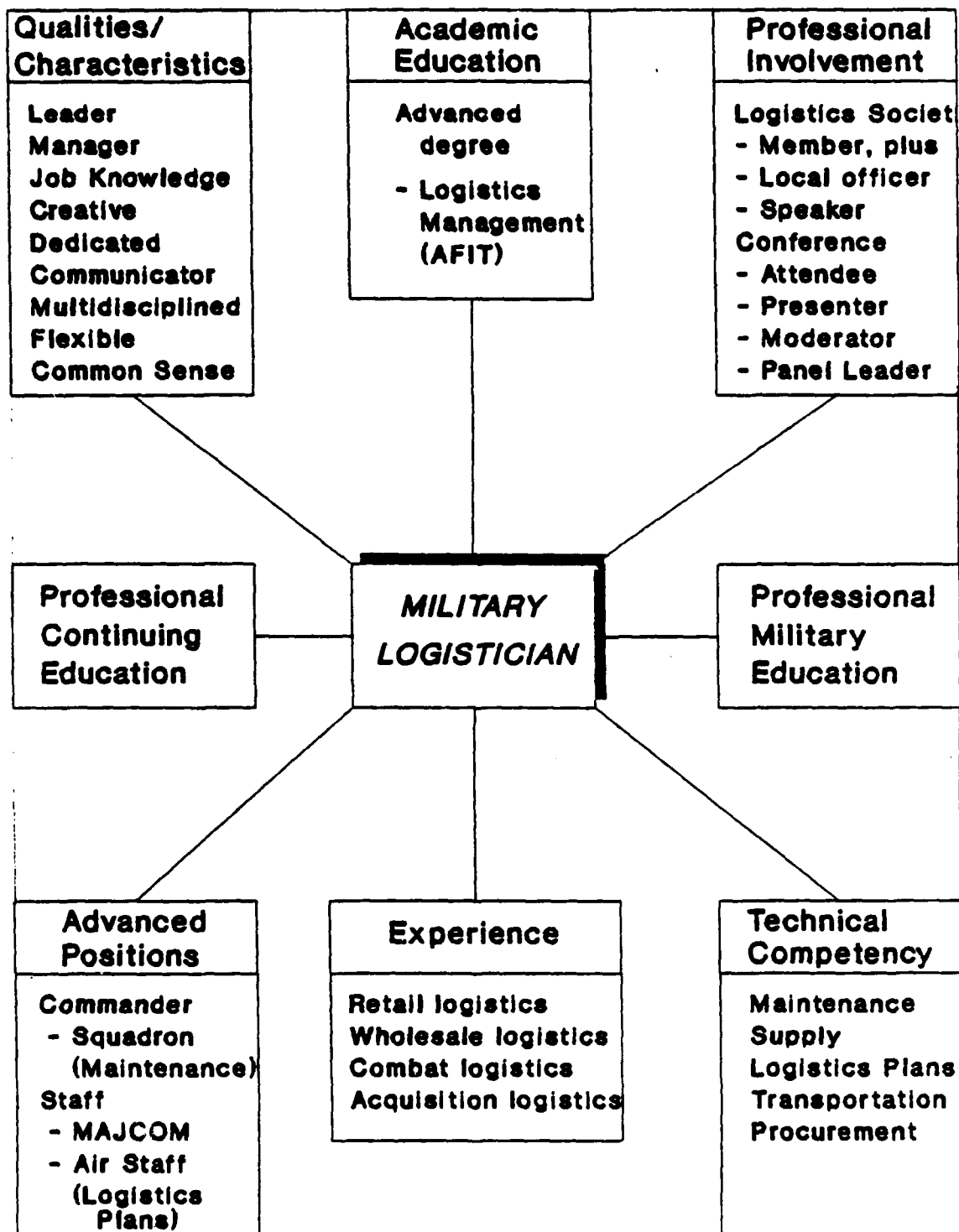
Figure 1. Overbey's Model

also recommended that the senior military logistician should be multidisciplined. These multidisciplined logisticians should be developed through varied job experiences as well as through academic education, PCE, and professional involvement. The experts insisted logisticians have experience in at least two functional areas and that the experience should be gained through two assignments at the wing or squadron level and perhaps one at the wholesale level (23:127-128). Both staff and command experience were deemed important for logistician development (23:129-130).

Overbey recommended that the Air Force establish logistics career development policies which would encourage officers to attain the model's career milestones:

> The Air Force needs to establish mandatory criteria for its Director of Logistics position, make these criteria public, screen and select logistician candidates who are qualified and willing to accept responsibility, and groom these selected officers for the positions [23:133-134].

In 1986, Captain Adelle R. Zavada used Overbey's model as the basis for assessing the qualifications of the current senior military logisticians. Her masters thesis, The Senior Military Logistician: An Empirical Study of United States Air Force Colonels, also investigated field level acceptance of Overbey's model (29:5). She restructured the model components. Overbey's eight model spokes were grouped under three dimensions -- experience, education and training, and professional attributes. The former spokes became subdivisions of the three dimensions and were referred to as

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"categories." The subdivisions of the categories were referred to as "elements" (29:15).

Zavada surveyed 50 expert logisticians to determine how the model should be weighted. These senior logistician experts were asked to allocate 100 points among the model dimensions, based on each dimension's relative importance to senior civilian logisticians. Next, the experts were asked to allocate 100 points among each category based on its relative contribution to the corresponding dimension. Finally, the experts were required to allocate 100 points among the elements of each category, again based on their relative contribution to that category (29:133-139). Zavada calculated model weightings from the means of the experts' weighting survey responses. The mean weightings for model dimensions, categories, and elements were adjusted to develop a 100 point grading scale. She used this grading scale to calculate individual respondent model scores (29:30-32). Experience was the most important model dimension. Respondents could receive a maximum of 39.8 points for a perfect experience score. Professional attributes was next in importance with 36 points possible. Last in importance was education and training which was worth 24.2 points (29:56). The weighted model is shown in Table 2 (29:56-57).

Zavada conducted a census of Air Force colonels serving in logistics career fields to determine both how well they

DIMENSIONS	CATEGORIES	ELEMENTS	
EXPERIENCE (39.8%)	Assignments in Logistics (22.8%)	Retail Wholesale Combat Acquisition	(5.3%) (5.8%) (5.5%) (6.2%)
	Advanced Positions (17.0%)	Commander Staff officer	(9.0%) (8.0%)
EDUCATION AND TRAINING (24.2%)	Advanced Degree (9.5%)		
	Professional Continuing Education (PCE) (7.3%)		
	Professional Military Education (PME) (7.4%)		
PROFESSIONAL ATTRIBUTES (36.0%)	Professional Involvement (6.2%)	Logistics Society: Member Officer/Speaker Conference attendee Conference presenter	 (1.7%) (1.6%) (1.0%) (1.9%)
	Technical Competence (15.4%)	Maintenance Supply Logistics plans Transportation Procurement	(3.9%) (3.2%) (3.3%) (2.1%) (2.9%)
	Personal Qualities and Characteristics (14.4%)	Leadership Management ability Job knowledge Creativity Dedication Communicator Multidisciplined Flexibility Common sense	(2.6%) (1.7%) (1.9%) (1.2%) (1.2%) (1.4%) (1.5%) (1.1%) (1.8%)

Figure 2. AFIT Military Model

fit the model and to validate Overbey's model. She found that, as a group, the colonels did not "fit" Overbey's model very well. Their mean score was 65.8 points out of a total 100 points (29:104). The top 20 percent of the respondents, on the other hand, were well qualified; their average score was 86.4 (29:128). Regardless of how well the respondents fit the model, they agreed with the model criteria as a means to outline the qualities, characteristics, and background required of senior military logisticians (29:119).

The resulting AFIT Military Model provided both a descriptive and quantitative model for military logistician development. It had the added value of being accepted by senior military logisticians as a valid model of the ideal senior military logistician.

Civilian Model. In 1987, Donald W. Nancarrow investigated the applicability of the AFIT Military Model to senior civilian logisticians. Nancarrow queried several senior leaders in logistics and asked them to recommend a list of expert senior civilian and military logisticians (20:21). Nancarrow compiled their responses and produced a list of over 200 expert senior logisticians. He interviewed two panels of 12 recommended expert logisticians to discover their opinion of the AFIT Military Model's value as a framework to describe the requirements for senior civilian logisticians. The experts from the first panel suggested the AFIT Military Model was useful at its top two levels, dimen-

sions and categories, to describe senior civilian logisticians (20:154). However, the experts did not believe all the categories were equally applicable to military and civilian logisticians and suggested the weightings may differ (20:138). The experts in the first round of interviews did not believe the Professional Military Education category and the technical competence category were equally applicable to civilian and military logisticians. They also did not believe the subdivisions of those categories, the model elements, would be equally applicable to civilian and military logisticians (20:64-65).

In his second round of interviews, Nancarrow questioned another panel of exerts to determine what elements should be considered for inclusion in the model and to obtain further information on the recommended model categories. The results of his second round provide a great deal of information about the requirements for the ideal senior civilian logistician. Nancarrow's experts recommended civilian logisticians obtain a bachelors degree by grade GS/GM-12. They also recommended that civilian logisticians earn a masters degree by grade GM-14 (20:125). When questioned about required experience, the experts agreed that the civilian logistician should have management and staff experience and that the experience should be obtained in logistics (20:78-81). They also recommended senior civilian logisticians should have experience in an average of 2.2 logistics disci-

plines. The experts agreed mobility was also part of a logistician's experience. According to the experts, a logistician's mobility history and present attitude towards mobility should be factors in their selection to senior positions (20:123). The experts also provided information about possible components of the professional attributes dimension. They said senior civilian logisticians should be technically competent in an average of 2.4 logistics functional areas and they should be more technically competent than their military counterparts (20:89,114). Based on a list Nancarrow provided them, the experts also recommended several personal qualities which are important to a civilian logistician. Four experts suggested that some of the recommended qualities should be considered skills rather than qualities (20:91-94).

Besides the detailed analysis of his interviews, Nancarrow proposed a draft Delphi survey that could be used in developing a descriptive model of the ideal senior civilian logistician. The draft survey reflected the information he obtained during his two rounds of interviews. The survey was designed to verify the inclusion in the civilian model of the top two levels of the AFIT Military Model and to determine what third level model elements should be added (20:209-224).

Civilian Logistician Career Guidance

The Air Force established the Logistics Civilian Career Enhancement Program (LCCEP) to manage the career development of its civilian logisticians. The objective of the LCCEP is to

> encourage and manage the development of logistics personnel to their fullest potential to meet the mission needs of the Air Force. The LCCEP provides a means of planned career progression through competition to senior-level Air Force logistics positions [14:1-1].

The guidelines for management of the LCCEP are contained in Air Force Regulation 40-110 Volume IV. The regulation authorizes the Air Force Logistics Civilian Career Policy Council to establish policies to administer the program (14:2-1). A subpanel of the Council, the Career Development Panel, is responsible for all civilian logistician career development issues (14:1-1).

Registration in the LCCEP is voluntary for most eligible employees. However, those who wish to be considered for career executive positions must register in the program (14:6-1). Included in these career executive positions are key logistics positions at the GS-12 and GS/GM-13 through GS/GM-15 level. All logistics positions at the GS/GM-14 and 15 level are included, unless specifically exempted, so most logisticians are registered at these grade levels. Since the LCCEP is the primary means of filling senior logistics positions, registration is a must for those who are interested in career advancement.

Those registered individuals who exhibit strong potential to assume senior logistics positions may compete for membership in the Logistics Executive Cadre. Cadre members receive priority consideration for management, executive, and developmental training. They are considered first for career broadening assignments and receive priority consideration for developmental assignments. They also receive extensive career advisory service from the Logistics Career Program Branch of Air Force Civilian Personnel Management Center (AFCPMC) (14:7-1). In essence, Cadre members are being "groomed" for senior logistics positions. Cadre membership is limited to a specific period of time. Further details of the program are found in AFR 40-110, Volume IV, chapter 7 and AF Pamphlet 40-3.

Another key element of the LCCEP is the Master Development Plan (MDP) which provides guidance on the training, education and work experience that will enhance the logistician's career advancement. MDPs have been developed for each of the eight logistics career groups: transportation, supply and distribution, maintenance, material management, international logistics, acquisition logistics, quality assurance logistics, and logistics plans and programs. Each MDP outlines the recommended training courses, college education, and typical assignments from the initial or intern level up through the executive level. An additional MDP outlines the core courses for executive development

(13:19-28). Management and executive courses sponsored by AFIT, Defense Management Education and Training (DMET), and the Office of Personnel Management (OPM) are included as well as Professional Military Education appropriate for the GS-12 level and above (14:A-17-18). The LCCEP Career Development Panel recommends equivalent sources of training be considered such as in-house command sponsored training, correspondence courses, and local college courses. Participation in professional organizations and professional seminars and conferences are also recommended as a "valuable source of self-development" (14:A-17).

The MDPs offer a basic road map for career development along the eight different career families. Many MDPs recommend career broadening and cross training into other logistics functions. In spite of its emphasis on multi-functioned experience, the LCCEP does not provide guidance aimed at developing total system logisticians. The MDPs reflect "stove-piped", or specialization oriented, career paths within a specific logistics career family.

Summary

This chapter discussed the major works pertinent to this research. It highlighted Wilson's and Zettler's dis-cussions of the specialist versus generalist debate as they apply to military and civil service logisticians. It also reviewed previous AFIT research on the requirements for the ideal senior military and civilian logisticians. Finally,

it described the current program by which the Air Force seeks to develop the best civilian logisticians possible -- the Logistics Civilian Career Enhancement Program.

The following chapter describes the methodology used to develop and validate a descriptive model of the ideal senior civilian logistician. It covers the four research phases -- building the model, weighting the model, validating the model, and comparing the senior civilian logistician population to the model.

III. Methodology

The research design was divided into four phases:
building the model, weighting the model, validating the
model, and comparing the population to the model. A series
of surveys provided the data to answer the investigative
questions associated with each of the four phases. Each of
the four research phases are described in detail in this
chapter.

Building the Model

Nancarrow's research suggested the dimensions and cate-
gories of the AFIT Military Model were applicable to a model
of the senior civilian logistician's qualities, character-
istics, and background (20:154). The Delphi method was used
to verify Nancarrow's findings and determine what lower
level model components should be included.

Delphi Method. The Delphi method is a means to gather
consensual, expert opinion through two or more iterations of
questioning. Its features are anonymity, controlled feed-
back, and statistical group response (12:16).

The Delphi method provides a means to develop concepts
based on opinion. Opinion is defined as the middle ground
between knowledge and speculation; it is based on judgment,
wisdom, and insight (12:2). If several people were asked
their opinion on an area which was subject to judgment, the

result would be several different answers. This would make it difficult to put that information into a usable form for explaining concepts, setting policy or making predictions. The opinion of a single advisor could be selected, but there is a chance that advice would not yield an optimal or even a valid solution. The opinion of a committee may be a better option because of the concept that "two heads are better than one" (11:2). When opinion is generated by a committee of experts there is still the chance of a suboptimal or invalid solution, but less so (12:6).

The Delphi method seeks to eliminate four of the disadvantages of face-to-face decision making. One of these disadvantages is the pressure for individuals to conform to the group opinion. In many instances dominant individuals, who may not have the best ideas, shape the group opinion. Another disadvantage is noise, or conversation not directed towards the problem, which can hamper the decision process by preventing discussion of the real issues (12:14). Group decisions may not be reached because some individuals will not back down from an opinion once it is publicly expressed. In addition, group members may be influenced by emotional arguments which are unsubstantiated (9:2).

The Delphi method seeks to control these adverse effects by soliciting individual answers. Responses from all group members are summarized and returned to the Delphi participants in the form of mean or median answers, measures

of dispersion of answers, and explanatory comments made by the individual participants. Those participants whose answers lay outside a specified range may be asked to justify or explain their responses during the next round of questioning. Participants may also be given the opportunity to refute the comments of others. These rebuttals may then be returned to the participants in the following round to elicit further comments (11:4). Through this feedback process, participants are led to consider factors they may not have thought of or had previously dismissed as unimportant (9:3). This iterative process is directed towards convergence of opinion.

Norman C. Dalkey, one of the developers of the Delphi method, conducted experiments in 1968 to investigate the properties of the Delphi method. The subjects of his experiments, University of California at Los Angeles upper class and graduate students, were asked almanac-type questions where the students would not know the answers, but possessed sufficient knowledge to make an educated guess. Dalkey found that feedback of responses and iteration of the process led to a convergence of the individual responses. In most cases, the group response became more accurate with iterations (12:19). Dalkey also compared results obtained by the Delphi method to the results obtained through face-to-face discussion. The Delphi questionnaire consensus was more accurate than the discussion consensus in 13 out of 20

trials (12:22). Dalkey also tested the effects of repeated iterations on the accuracy of responses. For cases in which iteration produced a different answer from the prior round, accuracy was improved 64 percent of the time (12:35). In another study, Dalkey tested the use of respondent self-ratings of expertise. Several methods of self-rating exist, but Dalkey found no significant correlation between the individual's self-rating and his performance. The ratings were useful only in selecting the most qualified individuals who, as a group, could produce better estimates than the randomly selected groups (11:4-5). This supported the claim that a group of experts could produce better results.

The Delphi method was chosen for this research project so the best logistics minds could be tapped to determine the qualities, characteristics, and background required of senior Air Force civilian logisticians. As stated in the first chapter, no model existed which described the ideal senior civilian logistician. In addition, the career development regulations have not outlined the ideal requirements. This appeared to be one of the ideal situations for use of the Delphi method, for Dalkey stated

> . . . The Delphi procedure is one of the most efficient
> I know for 'uncovering' the implicit models that lie
> behind opinions in the 'soft' areas. One of the most
> valuable side-products of a Delphi exercise concerned
> with strategic bombing was the skeleton of a model
> which was later fleshed out in great detail [11:9].

Bernice Brown, another Rand researcher, agreed with Dalkey.

She said Delphi results could be used as inputs for models when no measures existed to evaluate the alternative inputs (9:14).

The Delphi method has been criticized for its lack of rigor. H. Sackman reviewed 150 Delphi studies conducted by Rand and other organizations in his critical evaluation of the technique (24:1). Sackman compared these uses of the Delphi method to the "Standards for Educational and Psychological Tests and Manuals" prepared by the American Psychological Association (APA) in 1966 (24:9). In his review of the Delphi studies he noticed the statistical significance of Delphi results were rarely reported. Validity of most of the Delphi studies he examined was questionable because the results were not tested against actual events. In many cases the questionnaire items did not sample all the key elements of the subject in question, thus demonstrating a lack of validity (24:13, 15-16).

In this research every attempt was made to establish the validity of the results. The results were compared to actual events in two ways. First, the population of GM-15 civilian logisticians were questioned about their agreement with the model components. Second, the population of GM-15 logisticians was examined to determine how well they "fit" the model requirements. The researcher was careful to identify all key elements of the subject area. Prior to this research, Nancarrow conducted two sets of interviews to

identify possible model components. Additionally, Delphi respondents were asked if any elements should be added to the proposed model.

Sackman also criticized the use of experts as an element of the Delphi method. ". . . The use of experts as the principle and exclusive method for validating tests has been discredited" (24:16). In order for the research to meet APA standards, he believed the experience and qualifications of the experts should be documented (24:17). Also, the key characteristics of the respondents should be cited and more attempts should be made to obtain a wider range of experience and backgrounds among experts (24:19). Sackman recommended panelist selection be carefully planned. Any response differences between groups of different sex, age, or other variables should be reported (24:25-26).

These criticisms were considered when the experts were chosen for the Delphi and weighting surveys. Efforts to obtain a wide range of true experts are described later in this chapter.

Sackman criticized the Delphi process for other major flaws. The respondent dropout rate may bias results. Delphi surveys require participants to commit considerable time to the project, so those who do stick with it are often highly motivated toward the subject in question (24:20). Sackman also criticized the Delphi method for encouraging snap judgments. He recommended soliciting detailed

responses and encouraging criticism of others' remarks to discourage snap judgments (24:22). Sackman cautioned against the Delphi method's inherent pressure to obtain group consensus. Participants may not want to answer another round of questions so they will agree with the group response (24:22, 47-49). Sackman recommended

> . . . that conventional Delphi be dropped from institutional, corporate, and government use until its principles, methods, and fundamental applications can be experimentally established as scientifically tenable [24:70].

These criticisms are also addressed throughout this chapter. In addition, the results in Chapter IV show that the respondents took their time in answering the surveys and did not seem pressured to agree with the group response.

Most of the studies Sackman reviewed were forecasting experiments. Indeed, many of Sackman's criticisms of the Delphi method center around its use as a forecasting tool. The objective of this research effort was not forecasting, but to define a concept -- the required qualifications of senior civilian logisticians. Therefore, Sackman's criticisms may not extend to a study of this type; nonetheless, his criticisms are addressed throughout this chapter.

Survey Development. The Delphi survey used in this research was developed from Nancarrow's draft Delphi survey (20:209-224). Several questions were reworded, and some were eliminated. Although Nancarrow found the dimensions and categories of the AFIT Military Model were applicable to

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the civilian model, this survey was designed to confirm his results. As a result, a section on the proposed model was added. Items were realigned into sections corresponding to each potential model category, and a section on mobility was added. Mobility was included in a separate section because Nancarrow believed it impacted other areas, such as experience and technical competency (20:221). The first round Delphi survey is displayed in Appendix A.

The completed questionnaire was pre-tested by a GM-14 acquisition engineer from the Air Force Acquisition and Logistics Center and a colonel selectee logistics plans and aircraft maintenance officer from AFIT. Actual experts from Nancarrow's list were not used for pre-testing because their numbers were limited. These two individuals were chosen because of their logistics expertise and their similarity to the group of experts. Their participation allowed the researcher to "save" Nancarrow's experts for answering the actual surveys.

Definition of Population. The characteristics of the population of senior civilian logisticians were defined so a representative group of Delphi survey respondents could be selected.

Initial plans were to define the population as LCCEP registered senior Air Force civilian logisticians. To determine how many individuals elected not to register in the LCCEP, two summaries were requested from the Air Force

Civilian Personnel Management Center (AFCPMC). One summary counted all senior civilian logisticians in LCCEP-eligible job series by grade and job series; the other counted all senior civilian LCCEP registrants by grade and job series (2,3). A listing of all senior civilian logisticians according to grade, job series, organization, base, and command was also obtained (5). A large disparity existed between the number of civilians in LCCEP-eligible job series, a total of 585, and the 176 who were registered.

After reviewing these results, a more specific study population was defined. Senior civilian logisticians in job series that make them LCCEP-eligible (over 50 percent of their job is logistics-related) were included in the population only if they were, in fact, LCCEP registrants. This eliminated several hundred engineers, personnel specialists, administrators, and other specialists who were not serving as logisticians (5). Another listing, current as of 4 January 1988, was obtained from AFCPMC. It listed LCCEP registrants in LCCEP-eligible job series, according to grade, job series, organization, base, and command. The population was also defined to include all senior civilian logisticians serving in LCCEP-exclusive job series (346, 2003, 2010, 2101, 2130, and 2150) whether or not they were registered. Personnel in these exclusive job series primarily perform logistics duties. After these adjustments were made, the study population consisted of 168 GM-15s and 19

SES civilians (2,4). The actual composition of the study population is displayed in Table 1.

Table 1. Distribution of Senior Civilian Logisticians by Job Series and Command (GM-15/SES) (2,3)

Job Series	USAF	AFLC	Commands AFSC	Using	SOA	Total
301	1/1	23/0	1/0	0/0	1/0	26/1
345	0/0	11/0	0/0	0/0	1/0	12/0
346	4/2	69/10	5/0	1/0	4/0	83/12
801	0/0	9/0	1/0	0/0	0/0	10/0
1101	0/0	7/0	0/0	0/0	0/0	7/0
1601	0/0	14/4	2/0	0/0	0/0	16/4
2003	0/0	7/0	0/0	0/0	1/0	8/0
2010	0/0	4/0	0/0	0/0	0/0	4/0
2101	1/1	0/0	0/0	0/0	0/0	1/1
2130	0/0	0/0	1/0	0/0	0/0	1/0
2150	0/0	0/0	0/0	0/1	0/0	0/1
Total	6/4	144/14	10/0	1/1	7/0	168/19

USAF = HQ USAF or SAF level assignment
AFLC = Air Force Logistics Command assignment
AFSC = Air Force Systems Command assignment
Using = assignment in one of the Using Commands
SOA = assignment in one of the Separate Operating Agencies

Selection of Delphi Respondents. Specific respondents were selected from a list of experts compiled by Nancarrow. Nancarrow queried several senior leaders in logistics and asked them to recommend a list of expert senior civilian and

military logisticians (20:21). By obtaining lists of recommended logistics experts from individuals serving in several different agencies, bias was reduced and the recommended experts represented a variety of organizations.

Thirty logistics experts with a wide variety of backgrounds were selected as the Delphi respondents. Since the questionnaire contained several open-ended questions, the number of respondents was limited to a manageable level. The available number of senior logistics experts was also a limiting factor. For example, there were only 19 SES logisticians in the entire Air Force. It was determined that thirty respondents would be sufficient to allow variety while also reserving some expert respondents for the later weighting survey.

A partially representative Delphi sample was chosen based on the revised population description. Representation was deemed necessary to ensure a wide range of expert opinion. For example, the views of an operating command representative may differ from those of an Air Force Logistics Command (AFLC) representative, yet each view is equally valid. On the other hand, a completely representative sample would have allocated 86 percent of the Delphi expert positions to AFLC, thus biasing the results towards a point of view which may only be applicable to senior civilian logisticians in AFLC. Delphi experts were therefore selected from Headquarters USAF and the Secretary of the Air

Force, AFLC, Air Force Systems Command (AFSC), Separate Operating Agencies (SOAs), and the using commands. Ten retired and active duty general officers were selected as experts. As supervisors of senior civilian logisticians, these generals were included because they possessed valuable insight into the requirements and capabilities of their subordinates. Eight SES and eight GM-15 civilian logisticians from several different job series groups were also selected. As members of the population being modeled, their insights were necessary to determine the practical requirements needed to rise to senior logistics positions. Four respected logistics academicians, three of whom had Air Force logistics experience, were added to the group. Their experience as logistics educators as well as their knowledge of the private sector provided a broader perspective than that gained only from practical experience. The composition of the Delphi survey group is outlined in Table 2.

Before the surveys were mailed, each of the Delphi experts was telephoned to verify their willingness to participate. This measure, along with telephone follow-ups, was used to ensure a high response rate (15:173). Non-respondents were telephoned two weeks after the surveys were mailed. The resulting first round response rate was 97 percent.

Decision Rule. The aim of the Delphi method is to reach consensus on an issue. This might take several rounds

Table 2. Delphi Experts by Grade and Office Symbol

Group	USAF	AFLC	AFSC	Using	SOA
SES	SAF/ALG	MA		MAC/TR	
	USAF/LEE	PM			
		LOC/CA			
		ILC/CA			
		AFALC/OA			
GM-15	USAF/LETX	XRX	PLM		ESC/LG
		SMALC/DS			
		WRALC/CA			
		OOALC/CA			
		OCALC/MMM			
Active Generals	USAF/LE	SAALC/CC	PL	SAC/LG	
				TAC/LG	
Retired Generals	USAF/LE	CC	CC		
		CV	PL		
Academics	Virginia Polytechnic				
	Weber State				
	Arizona State				
	AFIT				

of questioning; however, time constraints on this study necessitated a cut off of three rounds. For the purposes of this study, consensus was defined as 60 percent agreement.

This figure represented a more stringent requirement than the customary majority rule, but at the same time, it

was deemed a reasonable standard to attain. For Likert scale items, "highly agree/agree" and "highly disagree/ disagree" responses were grouped together as a basis for determining whether consensus was reached. Other survey items were also subjected to the 60 percent consensus rule. The only exceptions to this rule were for those items which merely described potential model categories or elements. For example, the experts were asked by what grade should a civilian logistician possess a bachelors degree. The answer to this question described a model element, so no consensus was required. Instead, the mean response was computed.

The Likert scale responses were analyzed using parametric statistics. Some experts believe Likert and other attitude scales produce ordinal data which must be analyzed using non-parametric statistics. Other experts believe they can be classified as interval data. Research has shown minimal difference between the significance levels obtained using parametric and non-parametric statistics on this type of data (15:90-91). Therefore, data obtained from Likert scale responses were analyzed using parametric statistics.

Second Round Delphi Survey. Results from the first round were tabulated using a personal computer spreadsheet entitled VP Planner Plus. The mean responses were computed for each item. Responses to were examined for 60 percent or greater agreement, and consensus rulings were made. The second round Delphi survey was based on these results. When

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a consensus was reached on an item, that item was not repeated. However, consensus item feedback to the Delphi experts showed the percentage who agreed or disagreed with each Likert scale statement. Feedback on other consensus items consisted of modal responses and the percentage of respondents who selected the modal response. On descriptive items, the mean response was fed back to the participants.

Non-consensus items formed the basis for the second round questions. The Delphi experts were provided with their first round response to each item. The group mean or modal responses were also provided to each of the Delphi experts. The second round survey is shown in Appendix C.

Comments made by the first round respondents were also included as feedback. Each section of the survey began with representative general comments related to that section. Comments relating to a specific question were placed just before that question. This placement strategy was used to insure the respondents read and considered the comments before answering the second round questions. Respondents were also given the opportunity to express their opinions about the comments made by the other Delphi experts. A complete listing of first round comments is presented in Appendix B.

Telephone followups were conducted one month after the second round surveys were mailed. The response rate for the second round was lower than the first round response rate.

Four individuals failed to respond and one individual did not even receive the survey because he was transferred overseas. The second round response rate was 83 percent.

Although consensus was not reached on all survey items, a third round was not conducted. The items without consensus were descriptive in nature. Since these non-consensus items did not suggest additional model components, there was no need to delay model development by conducting a third round.

Development of Model. The consensus results, descriptive responses and Delphi expert comments were analyzed to determine the model dimensions, categories, and elements. The AFIT Military Model was used as a guide in developing model structure (29:31). The model development process is explained in detail in Chapter IV.

Weighting the Model

The design used to weight the model paralleled Zavada's methodology (29:133-136). Expert senior logisticians were surveyed and asked to weight each of the model components.

Development of Weighting Survey. This weighting survey was identical in form and process to Zavada's weighting survey (29:133-136). Expert senior logisticians were asked to allocate 100 points among the three model dimensions, based on each dimension's relative importance to senior civilian logisticians. Next, the experts were asked to allocate 100 points among each category based on its rela-

tive contribution to the corresponding dimension. Finally, the experts were asked to allocate 100 points among the elements of each category, again based on their relative contribution to that category. Comments on the model and its weighting were also solicited from the experts. The survey is shown in Appendix E and a complete listing of the experts' comments is presented in Appendix F.

The weighting survey was pretested by an expert senior military logistician on the AFIT faculty. No changes were recommended.

Selection of Weighting Survey Respondents. The objective of this survey was to weight each component of the model of the senior civilian logistician. Fifty-one senior logistics experts, from a wide variety of backgrounds, were selected to participate in the weighting survey. The small population size and limited number of recommended experts were key factors in choosing a sample of 51.

A by-name listing of Air Force senior civilian logisticians, current as of 2 May 1988, was obtained from AFCPMC (7). This updated listing provided the names of 20 active duty SES logisticians. All 20 SES logisticians were selected to participate in the weighting survey. In addition, one DOD SES logistician, one Air Force SES logistician who was not serving in a position that met the population criteria, two retired senior civilian logisticians, four active duty general officers, nine retired general officers,

two active duty colonels, one retired colonel, and two academicians from Nancarrow's list of experts were selected to participate. Since all but one SES were serving in HQ USAF, SAF, or AFLC, six of the general officers were selected from other commands to provide a balanced representation. These officers represented AFSC, the using commands, and the three other military services. Nine additional colonels serving as Deputies of Material Management or Maintenance at the Air Logistics Centers were also included in the survey group. Officers serving in these positions work closely with many senior civilian logisticians and all have a civilian deputy. Only the colonels who had served in those positions more than one year were selected to participate. This insured some degree of expertise among the colonels surveyed.

To insure the broadest representation of logistics experts, individuals who previously participated in the Delphi survey were not to be included in the weighting survey. Exceptions to this policy were made for seven SES logisticians since there were so few of them in the Air Force. Two generals also were selected to participate in both surveys because they represented commands in which sufficient experts were not available.

To increase response rates, Mr. Jerome Peppers signed the cover letter for this survey. Mr. Peppers is well known throughout the logistics community, and his endorsement of

this research may have been a factor in the high response rate. In addition, telephone followups were conducted two weeks after the surveys were mailed. Forty-four experts (24 military and 20 civilian) responded to this weighting survey, one survey was returned with no forwarding address, and six experts failed to respond. Therefore, the response rate was 88 percent.

Analysis of Weighting Survey. The model weightings were calculated from the means of the experts' weighting survey responses. Mean weightings were computed using the VP Planner Plus spreadsheet.

Since different numbers of military and civilian experts responded, a decision rule was developed to preclude any induced respondent bias. If there were no statistically significant differences in the mean weightings of these two groups, all expert responses would be included in the weighting process. If, on the other hand, statistically significant differences were found in the mean weightings assigned by the two groups, then equal numbers of each type of expert would be used to develop the model weightings.

The mean weightings of military and civilian respondents were therefore examined to see if they differed. The mean responses of military and civilian survey participants were compared using the Wilcoxon Rank Sum test to test for differences (8:409). Differences did exist between the weights assigned to some categories and elements, so four

military responses were removed from further analysis to give equal weight to each group. Using a random number generator, four military respondents were selected, and their responses were omitted. The mean weighting survey responses were then recomputed without those four scores. The results of the Wilcoxon Rank Sum tests are presented in Chapter IV.

The mean weightings for model dimensions, categories, and elements were adjusted to develop a 100 point grading scale. Model category weights were multiplied by their corresponding dimension weights to develop final category weightings. Mean element weightings were multiplied by their respective final category weights to develop final element weightings. This produced a 100 point model grading scale. The grading scale was used to determine individual respondent model scores during the validation survey.

Validating the Model

A major criticism of Delphi studies has been their lack of any form of validation (24:15). The model developed in this study was validated by asking all GM-15 civilian logisticians to assess their agreement with the model dimensions and categories. Additionally, the survey was used to determine how well respondents "fit" the model.

The population of 20 SES logisticians was not included in this validation survey to reduce the chance of bias. SES opinion had been solicited previously in the prior Delphi and weighting surveys. Their opinions were valuable to the

development and weighting of the model. However, any subsequent SES survey responses would very likely be biased by prior participation in this research.

Listings of GM-15 logisticians who met the population requirements were obtained from Air Force Civilian Personnel Management Center. The initial listing was current as of 2 May 1988 (7). A second listing, current as of 29 August 1988, included 21 GM-15s whose names were not transmitted on the first listing. One individual was omitted because she had been assigned to another branch of the service. The updated study population therefore consisted of 166 individuals. The population composition is displayed in Table 3.

Development of Validation Survey. The validation survey paralleled Zavada's validation survey (29:137-148). Some survey questions were designed to assess whether the GM-15 logisticians agreed with the model dimensions and categories. Likert scale questions were used to gather this information. Most Likert scale survey questions were taken word for word from the Delphi survey. Only three of these questions differed from those in the Delphi survey; however, these questions were implied in the Delphi survey. For instance, question 40 in the validation survey asked the respondent to indicate his level of agreement with the statement, "Involvement in professional logistics organizations is important to civilian logistician development." In the Delphi survey, the experts were asked what levels of

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Table 3. Distribution of GM-15 Civilian Logisticians
by Job Series and Command (7)

Job Series	USAF	AFLC	AFSC	Using	SOA	Total
301	2	17	0	0	2	21
345	0	11	1	0	0	12
346	3	68	6	2	3	82
801	0	7	1	1	1	10
1101	0	7	0	0	0	7
1601	0	15	2	0	0	17
1910	0	1	0	0	0	1
2003	0	8	0	0	0	8
2010	0	4	0	0	0	4
2101	1	0	0	0	0	1
2130	0	1	1	0	0	2
2150	0	0	0	1	0	1
Total	6	139	11	4	6	166

involvement in professional logistics organizations were
important to civilian logisticians. In addition, two vali-
dation survey questions were taken from the weighting sur-
vey. These questions required the respondents to allocate
100 points among the elements of the personal qualities and
professional skills categories, based on the relative degree
to which the ideal senior civilian logistician should
possess those qualities and skills.

Other survey questions asked whether the respondent had
certain experience, qualities, or background. Multiple

choice questions were used to ascertain whether the respondent met the ideal requirements. Fill-in questions allowed the respondents to indicate the degree to which they possessed certain qualities and characteristics. For instance, the respondents were asked to allocate 100 points among a list of personal qualities and a list of professional skills to indicate the relative degree to which they possessed those qualities and skills.

The survey was designed for self-rating or evaluation. Although self evaluation can be limited by the individual's perception of his strengths and expertise, it has provided fairly valid results in prior AFIT research. Zavada found that military respondents to her validation survey gave fair self-evaluations. This was evident in the distribution of respondent scores. In the professional attributes dimension, respondent scores appeared to be normally distributed. This suggested that the military respondents did not mark themselves high in every element, but rather they gave honest ratings (29:72). While supervisor evaluations were another option for this research, that method is not without problems. Supervisors may be prejudiced for or against the subordinate, and therefore not rate the subordinate objectively. Supervisors also may not have the necessary information to rate their subordinates on all the model elements. Self-rating worked well for Zavada's research, therefore it was also used for this validation survey.

The validation survey was pretested by one SES and one GM-15 senior civilian logistician. They recommended minor changes which were incorporated into the survey. The complete validation survey is shown in Appendix E.

The individuals who pretested the survey also recommended that questions 27, 28, 42 and 43 be changed due to the difficulty of assigning weights to the professional qualities and skills. A five point Likert scale was considered for questions 27 and 28. It was not used for two reasons. First, it would not allow any comparison to the results obtained by Zavada since the questions would not be parallel. Second, it was expected that many of the respondents would mark themselves as possessing all the qualities and being competent in all the skills. This would negate the purpose of obtaining scores in this area. While they may possess all the qualities and skills, they do possess them to varying degrees. The method of weighting qualities and skills was used to force respondents to indicate where their greatest strengths lay.

Approval of Validation Survey. The survey was submitted for approval in accordance with AFIT/LS Operating Instruction 53-10. Mr. Alan Olsen was briefed on the survey contents and his recommendation for survey approval was forwarded to Air Force Military Personnel Center, the final authority for survey approval. Mr. Olsen's involvement was beneficial and expedited the survey approval process.

Response Rate of Validation Survey. One hundred and
twenty seven respondents completed the validation survey.
Three surveys were returned because the individuals were
unable to complete them due to retirement or extended
medical leave pending retirement. Therefore, the validation
survey response rate was 77.9 percent of the GM-15
logistician population.

Analysis of Validation Survey. An SPSSx statistical
program and a VP Planner Plus spreadsheet were developed to
analyze the validation survey results. The t test was used
to determine if validation survey responses on model compo-
sition questions differed significantly from Delphi survey
responses on the same subject. In cases where identical
questions were not asked, the mean validation response was
examined to determine if the respondents agreed with the
statement and its corresponding model category. In addi-
tion, the Spearman Rank Correlation Coefficients were
computed to test whether the validation survey rankings of
the personal qualities and professional skills were
associated with the weighting survey rankings.

The SPSSx program was used to compute respondent model
scores and perform various statistical tests which are
described in the following section.

Comparing the Population to the Model

The fourth phase of this research involved comparing
the population of GM-15 logisticians to the model of senior

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civilian logisticians. The data used to accomplish this task was obtained through the validation survey.

Model Scores. An SPSSx program was developed to compute model scores for each respondent. A dichotomous scoring system was developed. Basically, the respondent either did or did not meet the requirements for each model component. Allowing for differing degrees of qualities or characteristics at this point in this research would have led to subjective scoring on the part of this researcher. The dichotomous scoring system thus facilitated fair and simple scoring. The scoring rules were as follows:

1. Assignments in Logistics. Respondents received credit for any experience in each of the logistics disciplines. If they had experience in wholesale logistics and any additional logistics discipline they received all points allocated to the logistics disciplines. The Delphi experts recommended these qualifications as being attainable, so full credit was granted to those respondents who possessed them.

The respondents received credit for an assignment in an operational command if they had experience in an Air Force operational command. They also received credit for prior operational military experience in any service. For example, an individual with prior Army infantry experience would receive credit. The rationale for this decision was based upon the assumption that an understanding of the needs of

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the logistics system user could be obtained in an operational assignment with any service.

2. Advanced Positions. Because experience in logistics was so important, individuals did not receive any credit for this category if less than 70 percent of their experience was in logistics positions. This was the threshold level set by the Delphi experts. Respondents received credit for management/supervisory positions if they had filled one or more position. They received credit for staff positions if they had experience at the division level or higher, the threshold identified by the Delphi experts.

3. Mobility. Respondents received credit for mobility if they had made two or more geographical moves. This threshold for mobility was defined by the Delphi experts.

4. Personal Qualities. Respondents received credit for a specific personal quality if their personal weighting was equal to or greater than the mean weight of all respondents. It was expected that the respondents would possess all the personal qualities to some degree. This grading method allowed for objective differentiation between the respondents. They received one point for the write-in qualities they proposed. However, a limit was set in the scoring program so they could not receive more points than the number allocated to the entire category.

5. Professional Skills. Respondents received credit for a specific professional skill if their personal weight-

ing was equal to or greater than the mean weight of all respondents. They received one point for the write-in qualities they proposed. As with personal qualities, limits were placed on the maximum number of professional skills points.

6. Professional Organizations. Credit was applied in a straightforward manner according to the respondent's answer to question 19. They received credit for each model element they marked.

7. Technical Competence. Respondents received credit for technical competence in a specific logistics functional area if they marked themselves "fairly competent" or better in that functional area. This was a rating of three or more on a five point scale. They received all the points allocated to technical competence if they marked themselves "fairly competent" or better in system, item, or program management and two other functional areas. This was the ideal standard set by the Delphi experts.

8. College Degree. Respondents received credit for degrees in any major.

9. Professional Continuing Education. Respondents received credit if they had completed any PCE course.

10. Professional Military Education. Respondents received credit for any PME they completed, except Squadron Officers School. According to the Delphi respondents, SOS was not valuable to the civilian logistician.

Analysis of Model Fit. Once the respondent scores were computed, descriptive statistics were computed to assess the respondents' fit to the model. Several statistical tests were performed to discover factors which accounted for differences in model scores. The Kruskal-Wallis H test was performed to determine if job series was related to differences in model scores. T-tests were performed to test whether specialist/generalist status or mobility were related to differences in model scores. Another Kruskal-Wallis H test was performed to test whether number of moves was related to differences in model scores.

Descriptive statistics were used in the discussion of high and low scorers. High scorers were defined as the top 20 respondents. There were only 20 SES logisticians in the population of senior civilian logisticians. Therefore, it was surmised that the top 20 GM-15 logisticians would be the top candidates to fill those SES positions. The qualifications of those top 20 respondents were examined to assess their fit to the model. For the sake of uniformity, the bottom 20 scorers were defined as low scorers. The characteristics of low scorers were also analyzed to determine their fit to the model.

Summary

This chapter described the research process used to develop a model which describes the ideal senior civilian logistician's experience, background, and qualities. A

Delphi survey of 30 expert senior logisticians was used to determine model dimensions, categories, and elements. A weighting survey of 44 expert senior logisticians was used to determine what weights should be assigned to each model dimension, category and element. Finally, a validation survey of all GM-15 senior civilian logisticians was used to determine whether senior civilian logisticians concurred with the model composition and to determine how well they compared to the model.

IV. Findings and Analysis

Introduction

This section describes the results obtained from each of the four phases of this research. During the first phase, a Delphi survey of 30 expert senior logisticians was conducted to determine the ideal background and qualities senior civilian logisticians should possess. Based on the Delphi survey results, a normative model was developed to describe the ideal experience, education and training, and professional attributes required of Air Force senior civilian logisticians. During the second phase, a weighting survey of 51 expert logisticians was conducted to prioritize the different components of the model. The resulting weightings provided a 100 point scale for use in "scoring" individuals against the model. In the third phase, a validation survey was used to determine if Air Force GM-15 logisticians agreed with the model dimensions and categories recommended by the Delphi experts. In the fourth phase, self-reported information obtained through the validation survey was used to compute model scores for the GM-15 logisticians who responded.

Delphi Survey

The purpose of the Delphi survey was to verify the first and second level model components (dimensions and

categories) suggested by Nancarrow and to determine what third level components (elements) should be included in the model.

The survey consisted of 20 Likert scale items which questioned the Delphi experts' agreement with statements concerning the qualifications and characteristics required of senior civilian logisticians. Seventeen open-ended questions were included to obtain information that would explain model components. Five items required the expert to rank different qualifications or characteristics. Seven multiple choice questions were also included to further define the model components. In addition to these structured questions, comments were solicited in each section of the survey. The Delphi experts provided numerous thoughtful comments. The large number of comments indicated that many of the experts spent considerable time answering the survey. One expert included five pages of typed comments along with his survey. The Delphi experts' comments are included in Appendix B.

Round One Results. A consensus of at least 60 percent of the Delphi experts was reached on 13 Likert scale survey items and three other questions. The consensus rulings were based on a total of 29 responses, even when all 29 experts did not answer a particular question. All the round one Likert scale responses are shown in Table 4.

Table 4. Likert Responses -- Round One Delphi Survey

Topic	Ratings 1	2	3	4	5	Mean	Consensus
Basic Model	0	1	1	24	2	3.96	90% agree
Experience							
Staff experience	0	0	1	11	17	4.55	97% agree
Multidisciplined	1	0	1	14	13	4.31	93% agree
Prior military service	6	1	8	10	4	3.17	
Career development plan	0	1	0	11	17	4.52	97% agree
Operational command	0	4	3	10	12	4.03	76% agree
Mobility							
SCL selection factor	1	3	3	12	10	3.93	76% agree
Reflects experience	0	5	6	13	5	3.62	62% agree
Functional mobility OK	1	5	7	16	0	3.31	
SCLs should be mobile	1	4	4	10	9	3.79	66% agree
Academic Education							
Masters degree	0	2	9	10	8	3.83	62% agree
Masters from AFIT	0	2	14	5	6	3.56	
PCE							
Important for CL	0	0	1	18	9	4.29	93% agree
PME							
Important to SCL	0	1	8	17	3	3.76	69% agree
Attend in residence	0	2	13	13	1	3.45	
Professional Involvement							
More important for CL	6	14	4	5	0	2.28	69% don't agree
Technical Competence							
More than one area	0	2	0	16	11	4.24	93% agree
More areas than military	2	8	3	14	2	3.21	
More in job than military	1	7	8	12	1	3.17	
Testing or certification	1	13	7	8	0	2.76	

Twelve of the non-Likert questions that provided explanatory information were not repeated in the second round. Sufficient information was obtained from the first round questionnaire to explain those areas. For the other non-Likert questions, frequencies were analyzed to determine if a consensus existed. In addition, means were computed for items with numerical or rank order responses. Responses to other than Likert scale questions are arranged by topic in Tables 5 through 12 which are displayed throughout the rest of this section.

By a 90 percent consensus, the Delphi experts confirmed Nancarrow's findings that the model dimensions and categories included in the AFIT Military Model were applicable to senior civilian logisticians (20:63). The experts' responses to each of the three AFIT Model dimensions are highlighted below.

Experience. The specific responses to the Likert scale questions concerning experience are displayed in Table 4. Ninety-seven percent of the experts agreed with Nancarrow's findings that senior civilian logisticians should have staff experience. They also confirmed his finding that senior civilian logistician should have had an assignment with an operational command. In addition, they concluded that senior civilian logisticians should be "multidisciplined," or experienced in more than one logistics discipline.

Expert logisticians in Nancarrow's interviews agreed that management and supervisory experience was important to senior civilian logisticians. They believed this experience should be obtained at several different organizational levels. In addition, the ideal senior civilian logistician should have supervised several people and managed considerable assets (20:78). Delphi experts in this research were asked to quantify the magnitude of these elements of management and supervisory experience. The results of this question and the other experience questions are shown in Table 5. Six experts claimed that these measures were not valid indicators of management and supervisory experience. As a consequence, this question was reworded for round two, so more information could be obtained.

While the Delphi experts agreed staff level experience was important, a consensus was not reached on the minimum organizational level for this experience. Headquarters AFLC or AFSC staff experience was selected most frequently as the ideal level of experience; division level experience was selected most frequently as the realistic level of staff experience.

Three of the Delphi questions dealing with experience were designed to determine what constituted multidisciplined experience. The experts were asked how many logistics disciplines should be considered for ideal and realistic experience. Seventy-five percent of the experts indicated

Table 5 . Experience Responses -- Round One Delphi Survey

Topic	Frequencies	Mean
Number personnel supervised		254
Dollars managed		300 million
Number management/supervisory jobs		3.7
Ideal staff experience level		
Branch	7	
Division	9	
Directorate	7	
Headquarters (AFLC, AFSC)	13	
Headquarters (USAF, SAF)	4	
Other	2	
Realistic staff experience level		
Branch	8	
Division	11	
Directorate	6	
Headquarters (AFLC, AFSC)	7	
Headquarters (USAF, SAF)	1	
Other	1	
Percent management/staff experience in logistics		69.9
Ideal number of disciplines		3.1
One	1	
Two	6	
Three	15	
Four or more	6	
Which disciplines (mean rank)		
Wholesale		1
Acquisition		2
Retail		3
Combat		4
International		5
Realistic number of disciplines		2.61
One	1	
Two	12	
Three	13	
Four or more	2	

three or more disciplines were ideal, but 89 percent of the experts indicated that realistically, experience could be obtained in only two or three disciplines. When asked to rank order the most important logistics disciplines, whole-sale, acquisition, and retail logistics emerged as the top three disciplines.

Career development programs were also addressed under the dimension of experience. All but one expert agreed that the Air Force should have a plan to identify promising civilian logisticians at lower and middle levels and groom them for higher level responsibilities. LCCEP may be seen as such a program, but none of the experts mentioned it in their comments.

Mobility was also deemed important to the civilian logistician. Not only should senior civilian logisticians be geographically mobile, but their mobility attitude and history should be factors in selection for GM-15 and SES promotion. The Delphi experts also agreed that an indivi-dual's mobility history reflects their breadth of experi-ence. The experts did not agree on the number of moves it takes to be considered mobile. Responses ranged from none to 15. These results and the other non-Likert results con-cerning mobility are displayed in Table 6. There was no consensus on whether functional mobility, e.g., movement between logistics functions, can be a good substitute for geographic mobility. However, 89 percent of the Delphi

experts believed a civilian logistician should have experience in two or three logistics disciplines to be considered functionally mobile.

In spite of this agreement, mobility appeared to be an emotional issue for the Delphi experts. The comments in Appendix B reflect considerable disagreement about the importance of mobility. Some Delphi experts felt mobility is necessary to prevent stagnation and to enhance a logistician's breadth of experience. Others caveated that view with the warning that "mobility for mobility's sake is wrong." Some Delphi experts believed mobility should not be a major issue in selection to fill senior positions. Others stressed the importance of the stability that civilians bring to organizations. They suggested that civilian logisticians should not be made to "look like" military logisticians.

Table 6. Mobility Responses -- Round One Delphi Survey

Topic	Frequencies	Mean
Number of moves		2.0*
None	1	
One	8	
Two	6	
Three	8	
Four or more	2	
Number of disciplines		2.6
Two	15	
Three	9	
Four or more	3	

* Outlying value of 15 not included, if included this value would be 2.5.

Education and Training. A consensus was reached on three of the education and training survey items. Academic education is important to the senior civilian logistician. The Delphi experts agreed that possession of both a bachelors and masters degree are necessary. The highest ranked field of study for these degrees was Logistics Management as shown in Table 7. When questioned about the timing of these degrees, the mean responses indicated a civilian logistician should have a bachelors degree by the GS-11 level and a masters degree by the GM-14 level, confirming Nancarrow's results (20:143).

Many of the experts' comments centered around the value of an AFIT education. The large number of comments may be due to the fact that additional comments about education were requested immediately after the question about AFIT. Opinion on the value of a masters degree from AFIT was mixed with a mean Likert scale response of 3.56 (see Table 4). Four Delphi experts commented that they favored sending civilian logisticians to many different schools. As one expert said,

> [I] Don't really understand the specific reference to AFIT -- the civilian should be encouraged to earn a masters somewhere -- not just AFIT.

The results differ from those obtained by Overbey. Senior military logisticians participating in Overbey's Delphi survey agreed that military logisticians should earn their masters degree at AFIT (23:103).

Table 7. College Education Responses -- Round One Delphi Survey

Topic	Frequencies	Mean
Best field for bachelors		
Logistics Management	9	
Engineering	5	
Management	5	
Degree important, area not	5	
Business Administration	4	
Sciences	1	
Grade level for bachelors (GS/GM)		10.8
Best field for masters		
Logistics Management	7	
Business Administration	5	
Management	4	
Degree important, area not	4	
Disagree	4	
Other	1	
Grade level for masters (GS/GM)		13.6

A consensus of expert opinion was also obtained on the importance of Professional Continuing Education (PCE) to the development of the civilian logistician. All but one of the experts agreed PCE was valuable to the civilian logistician. The Delphi experts also recommended 42 different courses and topics for civilian logistician PCE. Those courses are listed in Appendix C, the second round Delphi Survey.

Professional Military Education (PME) was also recommended as important in the development of senior civilian logisticians. While 69 percent of the Delphi experts believed PME was important, they could not agree upon whether civilians should attend PME in residence. The most valuable PME courses for civilian logisticians are shown in

Table 8. Squadron Officers School (SOS) was not seen as valuable to senior civilian logistician development. Fifteen Delphi experts rated SOS "not valuable", and 12 experts rated it fifth or sixth in importance.

Table 8. Most Valuable PME Courses

Course	Rank
Industrial College of the Armed Forces	1
Defense Systems Management Course	2
Air War College (or equivalent)	3
Air Command and Staff College (or equivalent)	4

Table 9 shows the actual PME experience of the civilian and military Delphi experts. Many of these experts had completed PME, so their opinions were supported by personal experience.

Table 9. Delphi Experts' PME Completion Frequencies

Course	Correspondence		Residence	
	Military	Civilian	Military	Civilian
SOS	4	4	6	2
ACSC or equivalent	3	3	6	2
ICAF	5	5	3	0
DSMC	1	0	4	1
AWC or equivalent	0	1	4	1

<u>Professional Attributes</u>. In the third model

dimension, professional attributes, a 60 percent consensus

was obtained on all four proposed categories -- involvement

in professional logistics organizations, technical compe-

tence, personal qualities, and professional skills.

Involvement in professional organizations was recommended

for civilian logisticians as shown in Table 10 below. The

consensus of the experts was that active membership, defined

as attendance at most meetings and functions, was important.

The Delphi experts also concurred on the importance of

attending the symposia, seminars and conferences of profes-

sional organizations. In addition, higher levels of partic-

ipation, such as serving as a panel leader, moderator, or

presenter, received consensus recommendation. However, the

Delphi experts did not feel it was necessary for senior

civilians to serve as officers in professional logistics

organizations. As one general officer said, "Senior

Table 10. Professional Involvement Responses --
Round One Delphi Survey

Topic	Frequency	Consensus
Level of involvement		
None	2	
Member	14	
Active member	19	66% agree
Officer	13	
Seminar/symposia/conference		
None	1	
Attendance	21	72% agree
Presenter	21	72% agree
Panel leader, moderator	22	76% agree

managers should resort to advisory roles. They have plenty
to do in their senior positions." The experts also did not
agree that professional involvement was more important for
civilian logisticians than for military logisticians (see
Table 4). In fact, the Delphi experts reached a 69 percent
consensus against this item.

Almost all the Delphi experts agreed that potential
senior civilian logisticians should have technical experi-
ence in more than one logistics functional area (see Table
4). The consensus opinion was that three functional areas
would be ideal, but no consensus was achieved on the realis-
tic number of functional areas in which a senior civilian
logistician could be competent. Most Delphi experts
believed technical competence could realistically be
achieved in two or three functional areas (see Table 11).
The most important functional area for a senior civilian
logistician to possess technical competence was system,
item, or program management. The rank order of the other
functional areas are listed in Table 11.

Although the experts reached the consensus that senior
civilian logisticians should be technically competent in
more than one area, they did not reach a consensus on the
other Likert scale items in this section (see Table 4).
They could not agree on whether civilian logisticians should
be more technically competent than their military
counterparts.

Table 11. Technical Competence Responses --
Round One Delphi Survey

Topic	Frequency	Mean	Consensus
Ideal number of functional areas		3.63	
Twc	2		
Three	19		70% agree
Four or five	2		
Seven	4		
Which areas (mean rank)			
System/Item/Program Management	1		
Maintenance	2		
Logistics Planning	3		
Engineering	4		
Supply	5		
Procurement	6		
Transportation	7		
Realistic number of functional areas		2.71	
Two	12		
Three	14		
Five	2		

They also could not agree on whether civilian logisticians should demonstrate technical competence through some sort of testing or certification. Their mean response, 2.76, and their comments in Appendix B suggest they do not feel testing is desirable.

Since Nancarrow's experts suggested that some of the personal qualities were actually skills, professional skills were placed in a distinct category, separate from personal qualities and characteristics (20:91-94). Ten personal qualities and ten professional skills from Nancarrow's research were submitted to the Delphi experts who were asked to select and rank order the five most important qualities

and five most important skills. The results are shown in
Table 12.

A natural break occurred at seven qualities and six
skills. The eighth ranked quality, multidisciplined, was
selected by only ten individuals. In addition, it received
consensus expert support for inclusion in the experience
dimension. Five Delphi experts recommended removing mobil-
ity from the list. One general officer commented that
mobility was "not a quality." Since mobility was included
under experience, it was removed from the list of qualities.
The eleventh ranked quality, dependability, was a write-in
and was selected by only one expert. The seventh ranked
skill, federal budgeting familiarity, was selected by only
six Delphi experts. This was far below resourcing ability
which was selected by 19 experts. Not one expert selected
scheduling ability as one of the top five skills. The ninth
through twelfth skills were selected by only one expert
each, with the exception of working with people, which was
selected by two experts.

Round Two Results. The second round Delphi survey
provided feedback of round one results to the experts.
Questions on which a consensus was reached were not
repeated; however, the consensus response was presented to
the experts. The comments from round one were also included
as feedback.

Table 12. Top Ranked Personal Qualities and Professional
Skills -- Delphi Round One

Rank	Quality	Skill
1	Leadership	Job Knowledge
2	Integrity	Problem Solving/Systems View
3	Dedication	Planning Ability
4	Management	Thorough Staff Work
5	Common Sense	Analytical Techniques
6	Initiative	Resourcing Ability
7	Communication	Federal Budgeting Familiarity
8	Multidisciplined	Computer Literacy
9	Vision/Forward Looking	Setting Priorities
10	Mobility	Working with People
11	Dependability	Analysis of Others' Work
12		Grievance Handling

Only 24 experts responded to the second Delphi survey
which was mailed to all 30 experts. The expert who did not
respond to the first Delphi survey did complete the second
one. Three experts who did not respond to the second round
had been reassigned to new jobs.

The Delphi experts' responses for round two continued
to reflect considerable thought. The results and comments
from round one stimulated considerable debate. Although the
second round survey was quite long (30 pages), the experts
still took the time to submit several more comments (see
Appendix D).

An unusual feature of the second round was that very few Delphi experts changed their answers from the first round. It may be that the experts were very confident of their opinions, or that they were afraid their second answers would be compared to their first answers. As one expert said,

> I felt uneasy about the formulation of the survey questions, like my responses would be checked against my original inputs and invalidated if they did not match. Have no reason to believe that -- just felt it.

Another unusual aspect of round two was that few new consensus were reached. This may have resulted because few experts changed their answers. Another contributing factor was that the issues addressed in round two did not lend themselves to black and white distinctions. Consequently, many of the experts in the second round responded with "neither agree nor disagree." The second round was valuable though, because the responses to several questions provided valuable explanations of various model components. Table 13 shows the results of the Likert scale items in the second round Delphi Survey. The responses to non-Likert questions are displayed in Tables 14 through 19. These results are discussed in the following sections by model dimension, beginning with experience.

Experience. Round one responses indicated that although management and supervisory experience were important, they could not be quantified by numbers of positions held, people supervised, or dollars managed. To obtain some

Table 13.   Likert Responses -- Round Two Delphi Survey

Topic	Ratings					Mean	Consensus
	1	2	3	4	5		
Experience							
Prior military service	2	3	6	10	3	3.38	
Mobility							
Functional mobility OK	2	3	6	12	1	3.29	
Academic Education							
Masters from AFIT	0	5	11	5	3	3.25	
PME							
Attend in residence	0	1	12	10	1	3.46	
Technical Competence							
More areas than military	1	5	7	10	1	3.21	
More in job than military	1	3	9	10	1	3.29	
Testing or certification	1	11	7	5	0	2.67	

explanation of the management/supervisory background
required of an ideal senior civilian logistician candidate,
the Delphi experts were asked what they looked for in candi-
dates.   Their answers indicated they look at several fac-
tors.   Ten experts said they looked at past performance and
what the individual really accomplished.   Four experts
looked at the complexity and importance of the positions the
individual filled.   Three experts looked at the position to
be filled to determine what type of experience is required.
The comments in Appendix D suggest many factors come into
play in judging an individual's management and supervisory
experience.   The Delphi experts concluded that management
and supervisory experience is very important for the senior

civilian logistician, but additional research is required to reach any consensus upon the measure of that experience.

No consensus was reached on the minimum level of staff experience for the senior civilian logistician. MAJCOM headquarters was selected most as the ideal level, and the division level was selected as the most realistic level (see Table 14). However, there was no clear cut consensus on the issue. Although the Delphi experts did not agree on the minimum level of staff experience required, the Delphi results suggest a senior civilian logistician candidate should have division level experience as an absolute minimum. These round two results were identical to the round one results, differing only in magnitude.

The results also suggest most of a senior logistician's management and staff experience should come from logistics jobs. During round one, the Delphi experts recommended an average of 69.91 percent of that experience be in logistics; it increased only slightly to an average of 71.5 percent in round two.

The Delphi experts could not agree upon how many logistics disciplines a senior civilian logistician could realistically have experience in. The mean response was 2.71, with 14 of the experts selecting three disciplines and 9 selecting two. Although in round one the experts said three disciplines were ideal, in round two they indicated that experience in two or more disciplines could realistically be

Table 14. Experience Responses -- Round Two Delphi Survey

Topic	Frequencies	Mean	Consensus
Ideal staff experience level			
Branch	4		
Division	5		
Directorate	4		
Headquarters (MAJCOM)	7		
Headquarters (USAF, SAF)	3		
Other	1		
Realistic staff experience level			
Branch	4		
Division	8		
Directorate	4		
Headquarters (MAJCOM)	6		
Headquarters (USAF, SAF)	1		
Other	1		
Percent management/staff experience in logistics		71.5	
Which disciplines (mean rank)			
Wholesale		1	75% agree
Acquisition		2	
Retail		3	
Combat		4	
International		5	
Realistic number of disciplines		2.71	
Two	9		96% agree
Three	14		2 or 3
Five	1		

achieved. The validation results presented later in this chapter confirm their opinion that two disciplines are realistic. The Delphi experts were very clear about which disciplines are most important. Eighteen experts selected wholesale logistics as most important, twelve selected acquisition logistics as next important, and thirteen selected retail as third in importance (see Table 14). While no consensus exists for the second and third place

choices, the next closest choice was acquisition for third place, with seven experts selecting that alternative.

No consensus was reached on whether or not civilian logisticians should have had prior military service even though the round two mean of 3.38 on the Likert scale was an increase from the round one mean of 3.17. While prior military service may be helpful to the civilian logistician, the experts were hesitant to make it a requirement.

The round two Delphi experts continued to debate on the mobility issue. No agreement was reached on the value of functional mobility as an indicator of breadth of experience. The mean Likert response for this item moved down slightly from 3.31 to 3.29. The Delphi experts did agree that experience in two or three disciplines constituted functional mobility (see Table 15). Since 96 percent of the experts agreed that experience in two or three disciplines was necessary (Table 14), it can be concluded that functional mobility is a requirement in addition to geographic mobility.

The round two responses also suggest that mobility is necessary to achieve a broad base of experience. The experts' comments support this requirement. Although the Delphi experts support a certain level of mobility, a major concern was voiced against "mobility for mobility's sake". The round two Delphi experts believed that geographic moves should be in response to the individual's need for career

Table 15. Mobility Responses -- Round Two Delphi Survey

Topic	Frequencies	Mean	Consensus
Number of moves		2.2*	
No response	3		
None	1		
One	5		
Two	5		63% agree
Three	8		2 or more
Four or more	2		
Number of disciplines		2.5	
No response	1		
One	2		
Two	10		79% agree
Three	9		2 or 3
Four or more	2		

* Outlying value of 15 not included, if included this
value would be 2.8.

broadening or the individual's qualifications to fill a spe-
cific job (see Appendix D). As one SES civilian said,

> Individuals should be willing to move to broaden
> [their] experience/perspective. [We] should not move
> people for the sake of moving -- [moves] should sat₁sfy
> needs of service and individual.

The Delphi experts' opinions on how many moves a civil-
ian logistician should make to be considered mobile were
varied and ranged from 0 to 15. However, 63 percent of the
experts supported two or more moves.

Education and Training. In round one the Delphi
experts agreed that civilian logisticians should obtain both
a bachelors and a masters degree. In round two the experts
were again asked to indicate the most valuable fields of
study for those degrees. The Delphi experts ranked the top
four choices from round one. Although the ranking changed,

the differences were slight. Logistics Management was still

chosen as the best field of study for a bachelors degree.

The Delphi experts were also asked to choose the best field

of study for a masters degree. Again, their top choice was

Logistics Management (see Table 16). Although a masters

degree in Logistics Management was most important to the

civilian logistician, the experts were nearly neutral about

encouraging civilian logisticians to obtain this degree at

AFIT. The mean Likert scale response for this item was

3.25. Round two expert comments reflected the opinion that

AFIT provides a good education for the logistician, but so

do other universities. As one GM-15 civilian said,

> AFIT is a very good school and logisticians would bene-
> fit by earning an M.S. from that institution; however,
> they would also benefit from the same at Texas A & M,
> LSU, University of Nebraska, etc.

Table 16. College Education Responses --
Round Two Delphi Survey

Topic	Frequency	Rank
Best field for bachelors (mean rank)		
Logistics Management		1
Management		2
Engineering		3
Degree important, area not		4
Best field for masters		
Logistics Management	8	1
Management	5	2
Business Administration	4	3
Degree important, area not	3	4

After developing a list of PCE courses they believed would be useful to the civilian logistician in round one, the experts selected the five most valuable courses in round two. Two additional courses were suggested -- Quality and Personnel Management. The top ten courses are listed in Table 17.

Table 17. Most Valuable PCE Courses

Course	Frequency	Rank
Program Management	11	1
Budget (PPBS)	10	2
Information/Data Systems	10	2
Human Relations	9	3
Communication Skills	6	4
Integrated Logistics Support	6	4
Labor-Management Relations	5	5
Public Policy/Administration	5	5
Contract Administration	4	6
Financial Management	4	6

No further consensus was obtained in the area of PME. The Delphi experts were only slightly in favor of civilians attending PME in residence, with a mean Likert response of 3.46 compared to their round one response of 3.45. Again, the comments suggest PME is valuable but should not be made mandatory for civilian logisticians.

Professional Attributes. No further consensus on
Likert scale items were reached in the technical competence
category, but Delphi expert answers provided further expla-
nation of the type and degree of technical competence
required of senior civilian logisticians. The experts
determined the three functional areas most important for the
development of senior civilian logisticians were 1) system,
item, or program management, 2) logistics planning, and 3)
maintenance. While the experts agreed the ideal civilian
logistician should have experience in three functional
areas, they were divided on the number of functional areas
in which a civilian logistician could realistically be tech-
nically competent (see Table 18). The experts were divided
between two and three functional areas. This was tested
during the validation phase, and the result was that techni-
cal competence in three functional areas could realistically
be attained. The specific results are discussed later in
this chapter.

While no consensus was reached on whether civilian
logisticians should be more technically competent than their
military counterparts, the round two responses tended to
support the view that civilian logisticians should be tech-
nically competent in more functional areas than their mili-
tary counterparts. The mean response was 3.21 on the Likert
scale, but there was no consensus (see Table 13). The
Delphi experts also tended towards the opinion that senior

Table 18. Technical Competence Responses --
Round Two Delphi Survey

Topic	Frequency	Mean	Consensus
Which areas (mean rank)			
System/Item/Program Management		1	67% agree
Logistics Planning		2	
Maintenance		3	
Procurement		4	
Supply		5	
Engineering		6	
Transportation		7	
Realistic number of functional areas		2.57	
Two	11		92% agree
Three	11		2 or 3
Four	1		
No response	1		

civilian logisticians should possess more technical compe-
tence in their current job than their military counterparts.
The mean response for this item was 3.29 on the Likert
scale, but again there was no consensus.

The issue of competency certification and testing drew
several comments. There was no consensus on the issue, but
the mean response of 2.67 on the Likert scale suggests that
the Delphi experts were against competency testing. Many
experts believed it would be difficult to develop and admin-
ister competency tests. Others recommended such tests be
developed, but only for lower grades. One individual recom-
mended an outside organization, such as SOLE, develop the
tests for the Air Force.

The top personal qualities and professional skills from
round one were ranked again in round two. Table 19 shows

the final round two rankings for the top seven personal qualities and top six professional skills. The top two rankings in each category were reversed from the round one rankings. Several other qualities and skills were ranked differently from round one as well. These rankings are compared to the round one and weighting survey rankings later in this chapter.

Table 19. Top Ranked Personal Qualities and
Professional Skills -- Delphi Round Two

Rank	Quality	Skill
1	Integrity	Problem Solving/Systems Viewpoint
2	Leadership	Job Knowledge
3	Communication	Planning Ability
4	Management	Resourcing Ability
5	Initiative	Analytical Techniques
6	Common Sense	Thorough Staff Work
7	Dedication	

Summary. The two rounds of the Delphi survey provided valuable information on the qualities, characteristics, and background required of the ideal senior civilian logistician. However, that information needed to be organized and shaped into a model to answer the first two research questions.

Model Development

A proposed model of the ideal senior civilian logistician was developed based on the results of both rounds of the Delphi Survey. The model paralleled the hierarchical arrangement of the AFIT Military Model developed by Zavada (29:31). The proposed AFIT Civilian Model is pictured in Figure 3. The physical arrangement differs from the military oriented models developed by Overbey and Zavada. While the dimensions are identical to Overbey's Model and the AFIT Military Model pictured in Chapter II (Figures 1 and 2), there are some differences in the model categories and elements.

The experience dimension was divided into three categories: assignments in logistics, advanced positions, and mobility. The Delphi experts identified that all three of these categories were important to the senior civilian logistician.

All logistics disciplines were included under assignments in logistics. While Overbey had omitted international logistics in the AFIT Military Model, it was included in the AFIT Civilian Model. An assignment in an operational command was also included under assignments in logistics. This element was unnecessary in the military model because most military logisticians have served in operational commands.

Advanced positions are different for civilians than for military officers. Civilians cannot be commanders.
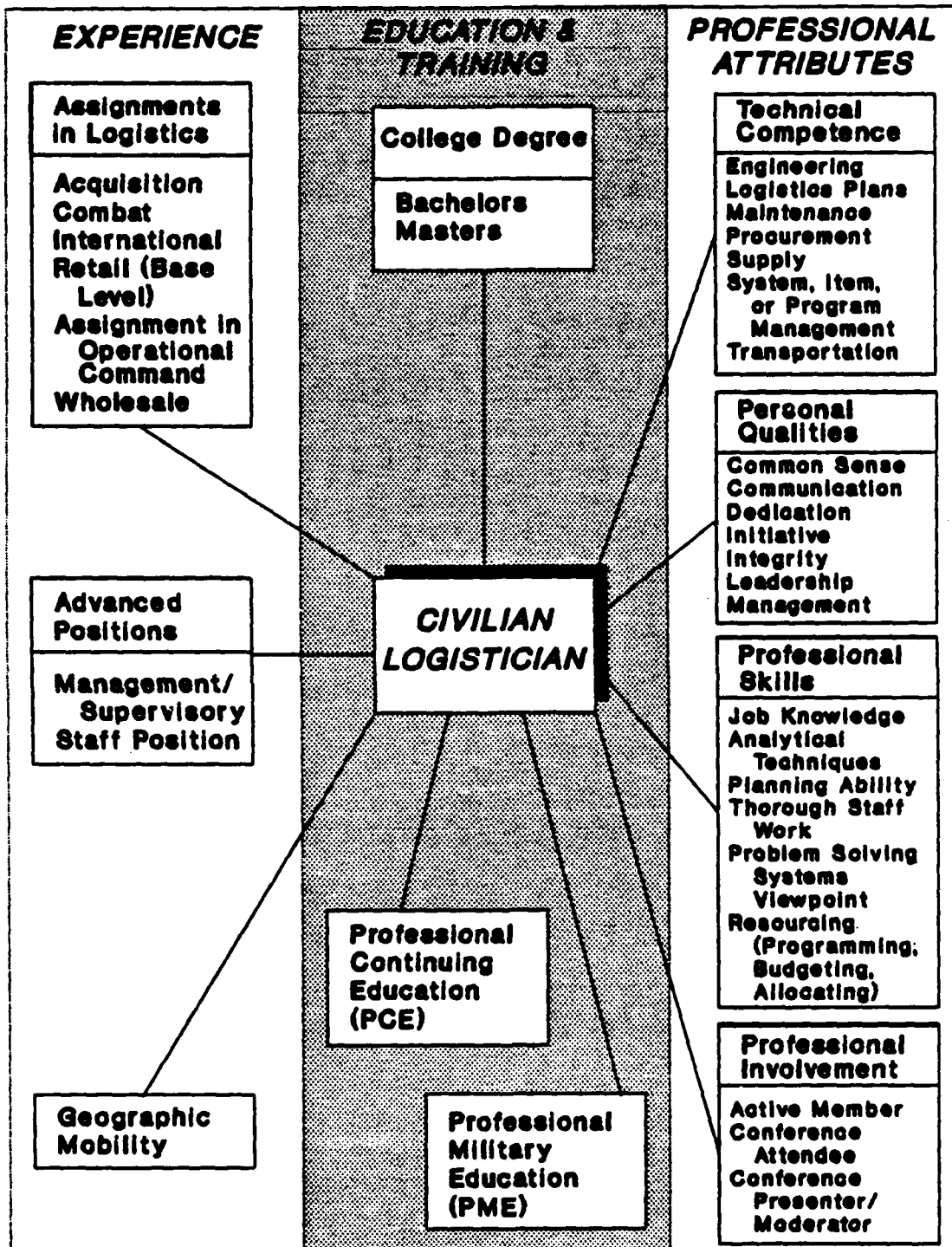
Figure 3. AFIT Civilian Model (Proposed)

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However, the Delphi experts agreed management and supervisory positions and staff experience were important requirements for senior civilians.

Mobility was included as a separate category under experience. The Delphi experts agreed mobility was important for senior civilian logisticians. Their consensus response in the first round Delphi survey indicated mobility was an indicator of experience instead of a personal quality. The issue of mobility had not been raised for military logisticians since it was assumed they were mobile.

Under education, the term "college degree" was substituted for "advanced degree" in the AFIT Civilian Model. Since there is no requirement for a bachelors degree for civilian logisticians, the term "advanced degree" could have caused misinterpretation. A bachelors degree and masters degree both received consensus recommendation by the round one Delphi experts, so they were included as elements under the college degree category.

Both PME and PCE were determined to be important to civilian logistician development. The experts recommended several PCE courses that would be valuable to the civilian logistician, but these courses were very specific and were not included as model elements. Depending on their individual backgrounds, not all civilian logisticians will benefit from the same courses. For instance, an individual with extensive budgeting experience will not require a course in

budgeting. However, 93 percent of the experts agreed that some form of PCE was important to the civilian logistician, so the category of PCE was included in the model.

The Delphi experts also recommended the most valuable PME courses for senior civilian logisticians. With the exception of Squadron Officers School, the Delphi experts believed all PME courses were valuable to the civilian logistician. Therefore, specific courses were not included as model elements.

There are several differences between the AFIT Military Model and the AFIT Civilian Model in the professional attributes dimension. In the AFIT Civilian Model, four categories were included under professional attributes: technical competence, personal qualities, professional skills, and professional involvement.

The Delphi experts agreed that technical competence in three logistics functional areas was important to the senior civilian logistician. All seven logistics functional areas were included as elements in this category. No consensus was reached on the importance of any specific functional area except system, item, or program management. Sixty-seven percent of the experts agreed that technical competence in system, item, or program management was most important to the senior civilian logistician. This requirement is important when scoring an individual against the weighted model, however all seven logistics functional areas were

included in this descriptive model. This allowed the model to remain a general guide for all senior civilian logisticians rather than a checklist for those seeking to "fill a square."

As mentioned previously in this chapter, personal qualities and characteristics from the AFIT Military Model were separated into personal qualities and professional skills for the AFIT Civilian Model. The top ranked seven qualities and six skills were included as model elements.

Three levels of involvement in professional logistics organizations were specified as model elements under the fourth professional attributes category. More than 60 percent of the round one Delphi experts agreed that active membership; conference, seminar, or symposia attendance; and participation as a presenter, panel leader, or moderator were important to the civilian logistician's development.

The results from the two rounds of Delphi surveys, when combined with Nancarrow's findings, were used to formulate a model of the requirements for the ideal senior civilian logistician. The development of such a model was one of the primary goals of this research. The content and structure of the AFIT Civilian Model provided the information necessary to answer research questions one and two. The answers to these questions are presented in the next two sections of this chapter.

<u>Research Question One</u>:

Can the top two levels of the model Nancarrow suggested be verified by expert logisticians?

The expert senior logisticians who responded to the Delphi surveys verified the model framework suggested by Nancarrow. The experts in Nancarrow's first set of interviews unanimously agreed that the three dimensions of the AFIT Military Model, experience, education and training, and professional attributes, applied to senior civilian logisticians (20:42). When questioned separately about the applicability of each of the eight model categories to civilians, Nancarrow's experts agreed that all eight categories were applicable to senior civilian logisticians (20:137). These eight categories were assignments in logistics, advanced positions, advanced degree, Professional Military Education (PME), Professional Continuing Education (PCE), professional involvement, technical competence, and personal qualities and characteristics (29:31).

The Delphi survey participants in this research were also questioned about the applicability of the dimensions and categories of the AFIT Military Model. Given a diagram of the model dimensions and categories, 93 percent of the Delphi experts agreed that the model describes the basic characteristics required of a senior civilian logistician. Further questions established the experts' agreement with the individual categories of the AFIT Military Model.

Mobility was added as a model category because it was identified as an important requirement during Nancarrow's interviews and the Delphi survey in this research. During Nancarrow's second set of interviews, the logistics experts agreed that a history of mobility and a current willingness to move were requirements for senior civilian logisticians (20:95-99). Nancarrow's experts did not agree whether mobility is part of experience or a quality unto itself. The Delphi experts in this research confirmed that mobility was important. During round one, a 68 percent consensus suggested that senior civilian logisticians should be mobile. In addition, 76 percent agreed that mobility history and current attitude should be factors in selection for senior civilian logistician status. The experts did not agree that mobility was a quality; in fact, five individuals recommended removing mobility from the list of personal qualities and two individuals rated it fourth in importance. A 62 percent consensus of the experts supported the idea that mobility history reflects breadth of experience. For these reasons, mobility was added as a separate category under experience.

Professional skills were also added in a separate category. During Nancarrow's second set of interviews, four experts suggested that some of the personal qualities and characteristics were really skills (20:93). The personal qualities and characteristics recommended during Nancarrow's

interviews were then divided into personal qualities and professional skills for the Delphi survey. The Delphi results confirmed this separation and it was included in the AFIT Civilian Model.

The top two levels of the model Nancarrow suggested were verified by a consensus of logistics experts. These results were obtained during the two rounds of Delphi surveys. Two additional model categories, mobility and professional skills, were also supported by these same Delphi experts. A diagram of the top two levels is presented in Figure 4.

The information obtained from the Delphi surveys was also used to answer research question two. The following section describes the third level elements which complete the model.

Research Question Two:

What specific third level elements should be added to the model?

Two iterations of the Delphi Survey were required to specify the model elements. The AFIT Civilian Model elements are described below according to their respective model categories. Figure 3 depicts all three levels of the model.

Assignments in Logistics. The assignments in logistics category contains six elements. The five logistics disciplines were included: wholesale, acquisition, retail,

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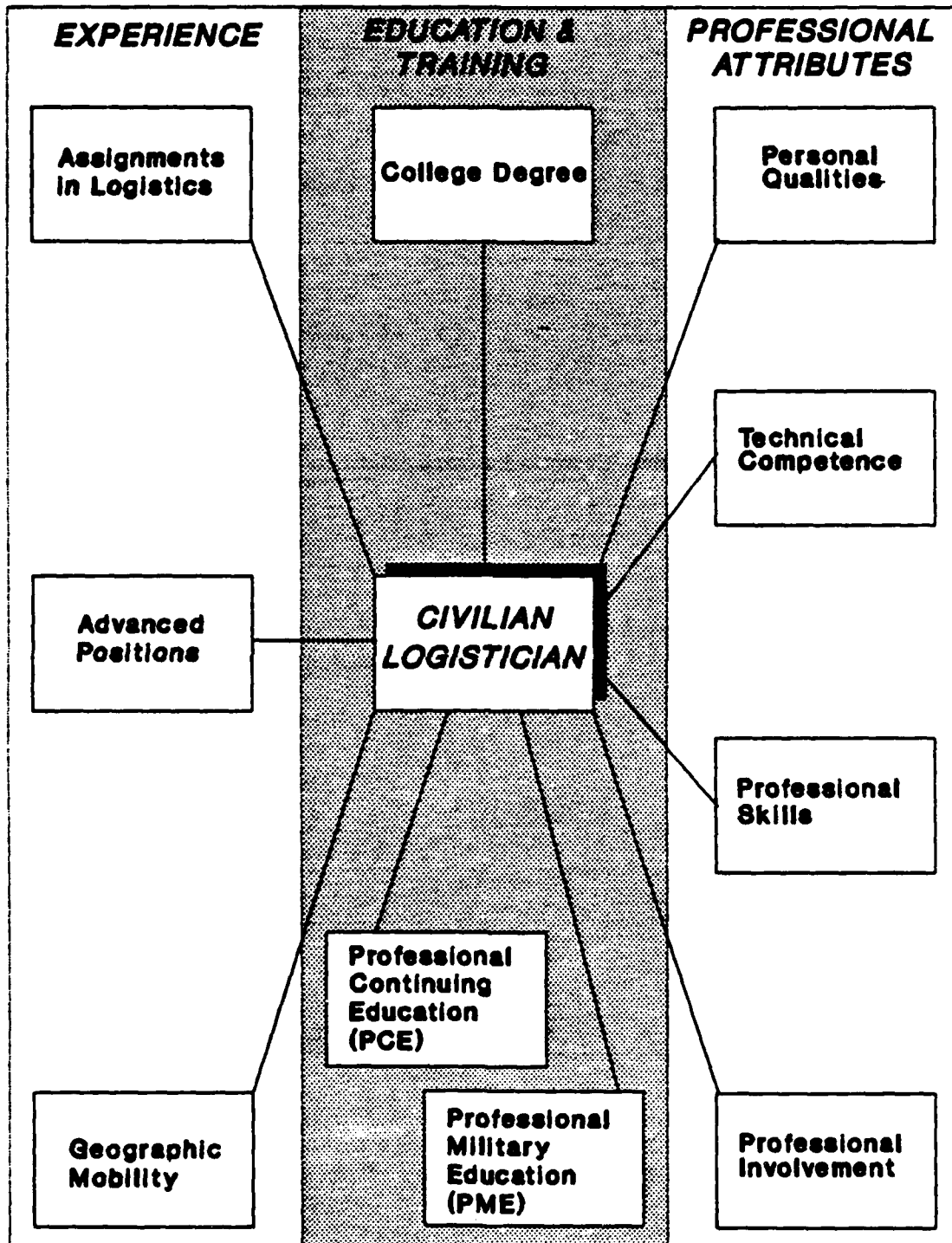
Figure 4. AFIT Civilian Model Dimensions and Categories

combat, and international. The Delphi experts agreed the senior civilian logistician should have experience in two or three of these disciplines. An assignment in an operational command was also recommended by 76 percent of the experts. This element is not mutually exclusive with retail experience. It is possible that a civilian logistician could gain base level supply experience in Tactical Air Command. He would then receive double "credit" for this experience. However, it is also possible for a civilian logistician to have base level supply experience at a training base, such as Chanute AFB, which has no operational mission. In this instance, the individual would not gain an appreciation for the needs and problems of the operational Air Force. Delphi expert comments stressed the importance of operational experience. Consequently, an assignment in an operational command was made an element of assignments in logistics, co-equal with assignments in the five logistics disciplines.

Advanced Positions. The advanced positions category contains two elements: management/supervisory and staff positions. Staff experience was recommended by 97 percent of the Delphi experts. That experience should be obtained at the division level or higher. Management and supervisory positions were also recommended by the experts. No objective criteria were developed to measure the quality of an individual's experience in advanced positions. However, past performance in those positions was very important.

<u>College</u> <u>Degree</u>. The college degree category contained two elements: bachelors degree and masters degree. Nancarrow established the importance of a bachelor's degree when the experts in his second set of interviews unanimously agreed a bachelors degree was necessary (20:70). The Delphi experts in this research had the opportunity to refute this when asked what field of study was best for a bachelors degree, none did. Additionally, 62 percent of the experts agreed that a masters degree was valuable to the senior civilian logistician. The best field of study for both degrees was Logistics Management.

<u>Personal</u> <u>Qualities</u>. Seven specific qualities were recommended as elements of the personal qualities category. These qualities, in order of importance, were leadership, integrity, communication, initiative, common sense, management, and dedication. Some qualities seem to encompass others, but all of these qualities were identified as being important to the senior civilian logistician, so they were included in the AFIT Civilian Model.

<u>Professional</u> <u>Skills</u>. The professional skills category contains six elements: job knowledge, problem solving/ systems viewpoint, resourcing ability, planning ability, analytical techniques, and thorough staff work. These skills were the most highly recommended during two rounds of the Delphi Survey.

Professional Involvement. Three elements of involvement in professional logistics organizations were selected by expert consensus. Active membership in a professional logistics organization was recommended by 66 percent of the experts. Attendance at professional logistics organization symposia, seminars, and conferences was recommended by 72 percent of the Delphi experts. Additionally, over 72 percent of the experts recommended higher levels of participation in professional logistics organization symposia, seminars, and conferences. They agreed civilian logisticians should be presenters, panel leaders, or moderators at these events.

Technical Competence. The seven logistics functional areas were listed as elements of technical competence. The Delphi experts recommended that senior civilian logisticians should be technically competent in three of the functional areas. System, item, or program management was ranked most important by 67 percent of the Delphi experts. The other functional areas are engineering, logistics plans, maintenance, procurement, supply, and transportation.

Summary. The Delphi survey results provided the necessary information to develop a model of the ideal senior civilian logistician. The resulting model, pictured in Figure 3, contains the dimensions and categories recommended by Nancarrow's experts as well as two new categories which were confirmed by the Delphi experts in this research. The

Delphi experts also recommended several third level elements to complete the model.

The AFIT Civilian Model provides a general guide to the qualities, characteristics, and background required of the ideal senior civilian logistician. However, it is descriptive in nature and does not assign any measure of relative importance to the model components. The weighting survey results described in the next section provided the necessary information to prioritize the model components.

Weighting Survey Results

The purpose of the weighting survey was to determine the relative importance of the model dimensions, categories, and elements. Fifty-one logistics experts were selected to participate in the survey. The composition of this group of experts is described in Chapter III. Out of the 51 experts selected, one individual moved without leaving a forwarding address and 44 responded for a response rate of 88 percent.

The weighting experts were asked to allocate 100 points among the different dimension, category, and element groupings, based on their relative importance to the senior civilian logistician. The survey and all attachments are included in Appendix E.

The mean weightings for each dimension, category, and element were computed. Then the mean weightings were computed for the two survey groups, military officers and

civilians (including academicians). These results are
displayed in Table 20.

It appeared that the weightings assigned by military
experts differed from the weightings assigned by civilian
experts for some of the model components. The Wilcoxon Rank
Sum test was used to determine if the assigned weightings
did, in fact, differ (8:409). The tests were performed on
components with the largest differences and continued
through components with smaller differences until a
threshold of negative results was reached. The results of
these tests are shown in Table 21. A difference existed if
the component T value did not fall between the upper and
lower T value limits, T_U and T_L. These limits were set for
a significance level of five percent for a two tailed test
and differed based on the number of weighting responses for
each component.

Military officers and civilians weighted several model
components statistically differently. Military experts
viewed an assignment in an operational command statistically
more important than civilians viewed it. On the other hand,
the civilians viewed wholesale logistics experience statis-
tically more important than the military officers viewed it.
This difference was not surprising. Wholesale logistics is
the purview of civilians, so civilians are likely to view it
as very important. They are less likely to have experience
in an operational command, the domain of military officers.

Table 20.   Military and Civilian Mean Weightings

Component	Military	Civilian	
Experience	42	38	*
Professional Attributes	35	36	
Education and Training	24	26	
Assignments in Logistics	48	47	
Advanced Positions	33	35	
Mobility	19	18	
Personal Qualities	34	31	
Technical Competence	32	31	
Professional Skills	24	26	
Professional Organizations	11	12	
College Degree	42	54	*
PCE	36	31	
PME	21	15	*
Wholesale Logistics	20	35	*
Acquisition Logistics	17	22	
Operational Command	24	12	*
Retail	15	13	
Combat	14	11	
International	9	7	
Management/Supervisory	61	66	
Staff Positions	39	35	
Leadership	25	17	*
Integrity	19	17	
Communication	11	20	*
Initiative	12	13	
Common Sense	13	11	
Management	10	12	
Dedication	9	10	
System/Item/Program Management	19	27	*
Maintenance	17	15	
Engineering	13	15	
Procurement	14	12	
Logistics Plans	13	11	
Supply	13	11	
Transportation	9	9	
Job Knowledge	25	24	
Problem Solving	22	19	
Resourcing	15	15	
Planning	16	14	
Analytical Techniques	9	16	*
Thorough Staff Work	14	11	
Member	39	43	
Presenter/Panel Leader/Moderator	41	39	
Conference Attendance	21	18	

* Examined for differences

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Table 21. Wilcoxon Rank Sum Tests for Selected
Model Components (8:411)

Model Component	T Value			
PME	372.5	$P=.05$	$T_L=367$	$T_U=533$
Experience	410.5			
College Degree	532			
Analytical Techniques	556.5			
System/Item/Program Mgt.	561			
Operational Command	288.5	$P=.05$	$T_L=359$	$T_U=521$
Leadership	381.5			
Communication	536.5			
Wholesale Logistics	572			

The civilians also viewed communication ability statistically more important than military officers viewed it. The military officers weighted leadership higher than civilians weighted it, although the difference was not statistically significant.

The civilians weighted analytical techniques statistically higher than the military officers weighted it. A possible explanation for this difference is that civilians perceive themselves as the technical backbone of a logistics organization and therefore view analytical techniques as an important skill in providing that expertise.

The civilian experts also viewed system, item, and program management as statistically more important than the

military experts viewed it. According to the Delphi experts, it was the most important logistics functional area in which senior civilian logisticians should be technically competent. That may explain why the civilians rated system, item, or program management higher than the military officers rated it.

Since differences between the opinions of the two groups could effect the model weightings, it was important that neither group dominate the weightings. An equal number of military and civilian experts were targeted to preclude the dominance of one group's opinions. Since 24 military and 20 civilian experts responded, a balancing of responses was necessary. To ensure the differing civilian and military points of view were equally represented, this researcher randomly selected and eliminated four military responses. Four military experts were selected using a random number generator, and their responses were omitted. The component mean weights were then recomputed without those four responses. The adjusted mean weightings are shown in Table 22.

The final model weightings were obtained by computing a unique weighting for every model category and element. The mean weighting for each category was multiplied by the weighting for its respective dimension to develop each final category weight. Then the mean element weights were multiplied by the final weight for their respective categories to

Table 22. Adjusted Mean Weightings

Component	Mean	Std. Dev.	Range
Experience	39.95	7.74	15 - 65
Professional Attributes	34.975	14.59	10 - 75
Education and Training	25.075	7.74	5 - 40
Assignments in Logistics	47.13	12.10	25 - 70
Advanced Positions	34.50	10.37	20 - 60
Mobility	18.38	7.63	5 - 35
Personal Qualities	32.88	13.74	10 - 60
Technical Competence	31.25	12.65	10 - 60
Professional Skills	24.40	11.23	10 - 75
Professional Organizations	11.48	8.26	0 - 40
College Degree	47.48	17.65	15 - 80
PCE	34.00	15.01	10 - 70
PME	18.53	10.13	0 - 45
Wholesale Logistics	27.53	14.57	5 - 60
Acquisition Logistics	20.03	8.56	5 - 40
Operational Command	17.88	10.84	5 - 50
Retail	14.03	6.97	0 - 30
Combat	12.28	7.59	0 - 30
International	8.28	4.56	0 - 20
Management/Supervisory	63.00	9.49	40 - 80
Staff Positions	37.00	9.49	20 - 60
Leadership	21.25	16.69	5 - 100

Table 22, continued

Component	Mean	Std. Dev.	Range
Integrity	17.75	9.02	0 - 40
Communication	15.23	14.46	0 - 80
Initiative	12.70	6.66	0 - 30
Common Sense	12.50	7.68	0 - 30
Management	11.08	6.21	0 - 25
Dedication	9.50	5.92	0 - 25
System/Item/Program Mgt.	23.42	9.75	5 - 50
Maintenance	15.58	5.16	8 - 30
Engineering	13.71	9.87	0 - 40
Procurement	12.96	5.87	0 - 30
Logistics Plans	12.37	6.39	5 - 40
Supply	12.06	4.92	0 - 20
Transportation	9.41	4.48	0 - 20
Job Knowledge	24.73	10.83	10 - 50
Problem Solving	19.85	6.68	5 - 30
Resourcing	15.70	7.81	0 - 40
Planning	15.20	7.52	5 - 50
Analytical Techniques	12.45	7.94	0 - 40
Thorough Staff Work	12.08	8.05	0 - 50
Member of Logistics Org.	41.25	20.99	10 - 90
Presenter/Panel Leader	40.00	19.13	5 - 80
Conference Attendance	18.75	10.41	0 - 40
Bachelors Degree	56.75	19.06	20 - 90
Masters Degree	43.25	19.06	10 - 80

develop final element weights. For example, the mean weight for advanced positions, 34.5, was multiplied by the mean weight for experience, 39.95. The result, 13.78, is the weight for advanced positions based on 100 points allocated across all of the model categories. The mean weight for staff positions, 37, was multiplied by the final weight for advanced positions, 13.78. The result, 5.10, is the weight for staff positions based on 100 points allocated across all of the model elements (and categories which do not have subordinate elements).

This process continued until every category and every element was weighted with a number that represented its unique contribution to the model. By summing the lowest level weightings of the model, a total model score of 100 points was achieved. The results of this weighting process were used to answer research question three.

Research Question Three:

What weightings do expert logisticians assign to the model dimensions, categories, and elements?

The following sections describe the weightings assigned to each level of the model. The levels are discussed separately, starting with the model dimensions and continuing through the categories and elements.

Model Dimensions. Experience was rated the most important model dimension with a mean weighting of 39.950 percent. It was followed by professional attributes,

weighted 34.975 percent, and education and training,
weighted 25.075 percent. Comments by the weighting experts
supported the view that a broad base of experience is very
important to the senior civilian logistician. One retired
general commented,

> Our senior civilian leaders need to have broad experi-
> ence, a solid educational background in a technical
> discipline, and abilities to relate these talents to
> current problems.

The weighting experts also commented on the importance of
professional attributes, especially the personal qualities
associated with professionalism. Their specific comments
are included in Appendix F. It is interesting to note that
the dimension weightings for the AFIT Military Model differ
from the AFIT Civilian Model by only a few percentage
points. Military logisticians surveyed by Zavada weighted
experience at 39.8 percent, professional attributes at 36.0
percent, and education and training at 24.2 percent (29:52).
These results suggest experience is vital to the success of
all senior logisticians.

Model Categories. The final model category weightings
are displayed in Table 23.

The assignments in logistics category received the
highest weighting of all model categories. It was followed
by advanced positions, another important part of a logisti-
cian's experience base. The third experience category,
mobility, was weighted much lower and is congruent with the
Delphi experts' view that mobility should serve a specific

Table 23. Final Category Weightings

Dimension	Category	Weight
Experience	Assignments in Logistics	18.83
	Advanced Positions	13.78
	Mobility	7.34
Professional Attributes	Personal Qualities	11.50
	Technical Competence	10.93
	Professional Skills	8.53
	Professional Organizations	4.01
Education and Training	College Degree	11.90
	PCE	8.53
	PME	4.65

purpose without being an end in itself. Another factor in mobility's low weighting may be that some individuals saw it as part of the other two experience categories.

The personal qualities category was weighted as the most important category of the professional attributes dimension. Some Delphi experts suggested that personal qualities were so important they should be included in a dimension separate from professional attributes. One of the weighting experts, a colonel, said "several of these are 'stand alone' and deserve 100 points each." Next in importance was the technical competence category. Technical competence was seen by some Delphi experts as one of the major contributions a senior civilian logistician brings to

an organization. The professional skills category was weighted less than the technical competence category but was considered twice as important as involvement in professional organizations. Although the Delphi experts generally viewed professional involvement as important, two of the weighting survey experts disagreed and suggested that it was not at all important. One expert commented that professional involvement was "too much fluff."

The college degree category was the most important category of the education and training dimension. Although there is no advanced education requirement for civilian logisticians, many Delphi experts believed higher education was important because of the discipline involved. The PCE category was next in importance. The PME category was weighted the least important, perhaps, as the Delphi experts suggested, because it was considered useful, but not necessary.

Model Elements. The final model element weightings are displayed in Table 24.

Under the assignments in logistics category, wholesale logistics was weighted highest at 5.18 percent. It was followed by acquisition logistics, weighted at 3.77 percent. These disciplines may be weighted highest because many civilian logisticians work in these disciplines. Furthermore, these disciplines comprise the primary responsibilities of AFLC, the largest employer of Air Force

Table 24. Final Element Weightings

Category	Element	Weight
Assignments in Logistics	Wholesale	5.18
	Acquisition	3.77
	Operational Command	3.37
	Retail	2.64
	Combat	2.31
	International	1.56
Advanced Positions	Management/Supervisory	8.68
	Staff Positions	5.10
Personal Qualities	Leadership	2.44
	Integrity	2.04
	Communication	1.75
	Initiative	1.46
	Common Sense	1.44
	Management	1.27
	Dedication	1.09
Technical Competence	System/Item/Program Mgt.	2.56
	Maintenance	1.70
	Engineering	1.50
	Procurement	1.42
	Logistics Plans	1.35
	Supply	1.32
	Transportation	1.03
Professional Skills	Job Knowledge	2.11
	Problem Solving	1.69
	Resourcing	1.34
	Planning	1.30
	Analytical Techniques	1.06
	Thorough Staff Work	1.03
Professional Organizations	Active Member	1.66
	Presenter/Moderator	1.61
	Conference Attendee	0.75
College Degree	Bachelors Degree	6.76
	Masters Degree	5.15

civilian logisticians. These disciplines were followed by an assignment in an operational command, which the Delphi experts believed was very important. An assignment in an

operational command was followed by retail logistics experience. Few civilian logisticians work in retail logistics positions; military logisticians fill the majority of those positions. Next in importance were combat and international logistics.

Under the advanced positions category, the management and supervisory positions element was weighted highest at 8.68 percent. This element was followed by staff positions, weighted at 5.10 percent. The Delphi experts stressed the importance of management experience. For example, one retired general commented that it was important to determine if the candidate for senior civilian logistician status had "really been in charge of" an organization.

In the personal qualities category, some elements were ranked differently by the weighting experts and the Delphi experts. A comparison of survey rankings of personal qualities is shown in Table 25. Leadership was weighted highest by the weighting experts at 2.44 percent, followed by integrity which was weighted 2.04 percent. Communication ability was ranked third with a weighting of 1.75. Initiative and common sense were weighted almost the same -- 1.46 and 1.44 percent respectively. They were followed by management and dedication.

Since the rankings were different from the prior Delphi rounds, a Spearman Rank Correlation Coefficient was computed to determine if those differences were statistically

Table 25. Comparison of Personal Qualities Rankings

Round One	Round Two	Weighting	Quality
1	2	1	Leadership
2	1	2	Integrity
7	3	3	Communication
6	5	4	Initiative
5	6	5	Common Sense
4	4	6	Management
3	7	7	Dedication

significant. Spearman's Rank test shows that variables are associated when the null hypothesis is rejected (25:202-13). The round one and two personal quality rankings were compared to each other. Then the rankings from round one and two were each compared to the rankings from the weighting survey. The results are shown in Table 26. The round one and two rankings were not associated. This suggests that the Delphi experts changed their initial rankings during round two. The round two and weighting survey rankings were associated which indicates the weighting survey confirms the final Delphi rankings. The round one rankings were not associated with the weighting rankings. This supports the results of the first two tests; a convergence of opinion was reached after the second round and was supported by the weighting results.

Table 26. Spearman Rank Test Results for
Personal Qualities (25:210)

Comparison Groups	Spearman rs	Critical Value	Signif. Level	Conclusion
Rd. one and two	.36	.71	.05	Cannot reject
Rd. two and weight	.86	.71	.05	Can reject
Rd. one and weight	.29	.71	.05	Cannot reject

In the technical competence category, system/item/ program management was weighted highest at 2.56 percent. This confirms the Delphi experts' opinion that technical competence in system, item, or program management is most important to senior civilian logisticians. The next most important functional area was maintenance, weighted at 1.7 percent by the weighting experts (see Table 24). Engineering followed maintenance with a weighting of 1.5 percent. Procurement was weighted the fourth most important functional area by the weighting experts. Logistics plans and supply were weighted 1.35 and 1.32 percent, respectively, followed by transportation which was weighted 1.03 percent.

The weighting survey rankings for technical competence were also different from the Delphi survey rankings. Again, the Spearman Rank test was used to determine whether the rankings from the different surveys were statistically associated. The results are shown in Table 27. The round one results were statistically associated with the round two and

Table 27. Spearman Rank Test Results for Technical
           Competence (25:210)

Comparison Groups	Spearman r_s	Critical Value	Signif. Level	Conclusion
Rd. one and two	.82	.71	.05	Can reject
Rd. two and weight	.64	.71	.05	Cannot reject
Rd. one and weight	.82	.71	.05	Can reject

weighting results. However, the round two results were not associated with the weighting results. The weighting experts confirmed the first round rankings but not the second round rankings. Since the first and second round results are associated, it does not appear to be significant that the weighting results did not confirm the second round results.

In the professional skills category, job knowledge was weighted as most important with a weighting of 2.11 percent. It was followed by problem solving/systems viewpoint which was weighted 1.69 percent. Resourcing and planning ability were weighted almost the same -- 1.34 and 1.30 percent, respectively. Analytical techniques and thorough staff work were weighted almost identically at 1.06 and 1.03 percent, respectively. As can be seen in Table 28, some of the weighting survey rankings for professional skills differ from the Delphi survey rankings.

Table 28. Comparison of Professional Skills Rankings

One	Two	Weighting	Skill
1	2	1	Job Knowledge
2	1	2	Problem Solving/Systems Viewpoint
6	4	3	Resourcing Ability
3	3	4	Planning Ability
5	5	5	Analytical Techniques
4	6	6	Thorough Staff Work

The Spearman Rank test was used once again to determine
if the differences between the survey rankings were statis-
tically significant (25:202-13). The results are shown in
Table 29.

Table 29. Spearman Rank Test Results for Professional
Skills (25:210)

Comparison Groups	Spearman rs	Critical Value	Signif. Level	Conclusion
Rd. one and two	.71	.83	.05	Cannot reject
Rd. two and weight	.89	.83	.05	Can reject
Rd. one and weight	.71	.83	.05	Cannot reject

The rankings from round one and two are not associated.
The round one results and the weighting results are also not
associated. However, the rankings from round two and the
weighting survey are associated. This suggests the

weighting survey results are statistically similar to the
final Delphi results.

In the category of involvement in professional organi-
zations, active membership was weighted highest at 1.66
percent. It was followed closely by participation as a
presenter, moderator, or panel leader at conferences, semi-
nars, or symposia. Last in importance was attendance at
conferences, seminars, and symposia which was weighted 0.75
percent. Active membership may be rated most important
because of its value to an individual's professional devel-
opment. In addition, active membership can be pursued by
most civilian logisticians.

In the college degree category, a bachelors degree was
weighted higher than a master's degree, 6.76 percent versus
5.15 percent. These results are logical since the bachelors
degree is a prerequisite for the masters degree. This also
confirms the previous Delphi results. The Delphi experts
unanimously supported the requirement for senior civilian
logisticians to possess a bachelors degree, but only 62
percent of them supported the requirement for a masters
degree.

Weighting Survey Summary. The model weightings devel-
oped from the weighting survey results put the model compo-
nents into perspective for those who may use the model. The
weightings allow the senior civilian logistician, or candi-
dates for that grade, to see which areas are most important

to their development. These weightings also allow the user to "score" an individual based on his possession of those qualities, characteristics, and background included in the model. Information was gathered during the next phase of the research, the validation survey, to do just that. Results from a census of Air Force GM-15 logisticians provided the data to determine how well current senior civilian logisticians "fit" the model. The validation survey was also designed to validate the top two model levels recommended by the Delphi experts. It assessed the GM-15 logisticians' agreement with the Delphi experts on the importance of the dimensions and categories of the AFIT Civilian Model.

Validation Survey

The purpose of the validation survey was twofold. First, the survey was used to determine whether senior civilian logisticians, specifically GM-15 logisticians, agreed with the model dimensions and categories. Most of the questions used for this purpose were taken word for word from the Delphi survey. Only three of these questions differed from the Delphi survey; however, these questions were implied in the Delphi survey. In cases where the questions were identical, the statistical t-test was used to determine if the mean Delphi and validation responses were equal. When identical questions were not asked, the mean response

was examined to determine if the respondents agreed with the statement and its corresponding model category.

The second goal of the validation survey was to determine how well the population of GM-15 logisticians fit the model. Multiple choice questions were used to ascertain whether the respondents possessed the qualities, characteristics, and background prescribed in the model. Open ended questions allowed the respondents to indicate the degree to which they possessed certain qualities and characteristics. Model scores were computed for each respondent based on their responses.

Population Representation. The responses were first examined to determine if the respondents were representative of the population. The response rate was high; 127 individuals returned the survey and 3 additional individuals were unable to reply because they had either retired or were on extended sick leave pending retirement. The resulting response rate was approximately 78 percent. Response rates for the different job series were also examined. The results are shown in Table 30. In spite of lower response rates in some of the smaller job series, the response sample appears to be representative of the population that was surveyed. Once the sample of respondents was determined to be representative of the actual population, the responses were analyzed to determine if they validated the first two levels of the AFIT Civilian Model.

Table 30. Validation Survey Response Rates by Job Series

Job Series	Respondents	Total	Percent
301	17	21	81
345	8	12	67
346	66	80	81
801	8	10	80
1101	6	7	86
1601	11	17	65
1910	1	1	100
2000*	7	11	64
2100*	3	4	75

* Indicates grouping of entire series.

Research Question Four

The Likert and open-ended responses to the validation survey were analyzed using the SPSSx statistical package and the VP Planner Plus spreadsheet package. The statistical t-test was performed to determine if the mean Delphi and validation responses differed. The results provided answers to research question four:

Do grade GM-15 senior civilian logisticians believe the model dimensions and categories are valid?

Model Categories. The t-test was used to answer research question number four. One of the assumptions of the t-test is that population variances are equal for the samples being compared. The F test was used to determine if the population variances were equal. The null hypothesis

for the F test is that the population variances are equal. Consequently, when a computed F value falls in the rejection region, the variances are not equal and the t-test assumptions are violated (18:357). Table 31 shows the results of the F test. The t-test assumptions were violated on two of the survey items: question 33 which stated senior civilian logisticians should have staff experience and question 38 which stated PCE is important to civilian logisticians. The mean responses for these items are analyzed later in this section. The assumptions for the other items were met so the t-test was performed.

Table 31. F Test Results for Validation (18:357,973)

Subject	computed F value	.05 sig. F value	Conclusion
Staff experience	2.31	1.83	variances are not equal
Multidisciplined	1.49	1.83	variances are equal
Mobility attitude/ history	1.46	1.83	variances are equal
Geographic mobility	1.24	1.85	variances are equal
Masters Degree	1.38	1.83	variances are equal
PCE important	2.87	1.85	variances are not equal
PME important	1.08	1.83	variances are equal
Technical exper. (more than one area)	1.35	1.83	variances are equal

T-tests were performed on those items that passed the F test requirements. The results are displayed in Table 32.

Table 32. T-Test for Equal Population Means (18:346)

Subject	computed t value	Conclusion
Multidisciplined	-2.31	means appear to be equal
Mobility attitude/ history	-5.06	means are not equal
Geographic mobility	-3.69	means are not equal
Masters Degree	-3.85	means are not equal
PME important	-1.89	means appear to be equal
Technical exper. (more than one area)	-0.33	means appear to be equal

* two tailed test, .01 significance level, ±2.576

The population means were statistically different in all but three areas. The Delphi experts and validation respondents, to an equal degree, did agree that PME is important for senior civilian logisticians and that senior civilian logisticians should be multidisciplined and should have technical experience in more than one area. The results suggest that senior civilian logisticians should be multidisciplined, with assignments in more than one logistics discipline. These results validate the inclusion of the assignments in logistics, PME, and technical competence model categories. However, the validation respondents did not agree equally with the Delphi experts on the other subjects. The mean responses for all validation survey questions and corresponding Delphi survey responses appear in Table 33.

Table 33. Comparison of Delphi and Validation Survey
Mean Responses

Subject	Delphi mean	Validation mean
Management and supervisory experience	N/A	4.81
Mgt/Supv. experience at several levels	N/A	4.42
Staff experience	4.55	4.06
Multidisciplined	4.31	3.83
Mobility attitude and history factors in selection	3.93	2.59
Geographically mobile	3.79	2.80
Masters degree	3.83	2.98
PCE important	4.29	3.72
PME important	3.62	3.23
Involvement in professional logistics organizations	N/A	3.21
Technical experience in more than one area	4.24	4.18

Although the Delphi experts and validation respondents did not agree equally on most of the subjects, comparisons of the mean responses were possible. Table 33 shows the comparisons. The GM-15 validation respondents agreed with all of the statements except for three.

The GM-15 validation respondents agreed with the Delphi experts on two statements in addition to the three discussed previously. The validation respondents believed senior civilian logisticians should have staff experience, with an

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average response of 4.06 on the five point Likert scale. The GM-15s indicated that PCE was important, with a mean response of 3.72 and, like the Delphi experts, they tended to agree more strongly about the importance of PCE versus PME. Their mean response for PME was 3.23. These results confirm the weighting survey results that also placed more importance upon PCE than PME. As mentioned previously, the validation respondents believed that senior civilian logisticians should be technically competent in more than one logistics functional area. Their mean response to this item, 4.18, indicates strong GM-15 support for the inclusion of the technical competence category. These results validate the inclusion of assignments in logistics, PCE, PME, and technical competence as model categories.

There were three additional validation survey questions which did not have corresponding Delphi questions. The validation respondents agreed with each of these statements. They agreed quite strongly that senior civilian logisticians should have management and supervisory experience and that the experience should be obtained at several different organizational levels. They rated these items 4.81 and 4.42, respectively. While the Delphi experts did not respond to the same Likert items, their comments indicated strong support for management and supervisory experience. The Delphi experts' comments in Appendices B and D detail their recommended requirements for that experience. These

GM-15 responses, combined with their response to the question about staff experience, validate the inclusion of the advanced positions model category.

The validation respondents were almost neutral towards the statement that involvement in professional logistics organizations is important to civilian logistician development. Their mean score on this item, 3.21, does validate the inclusion of the professional involvement category. However, their response also suggests that this involvement is not extremely important, thus confirming the low weightings assigned to this category by the weighting experts.

The validation respondents did not agree with the Delphi experts that senior civilian logisticians should be mobile or that their mobility attitude and history should be factors in selection for senior positions. This is an important finding. The current Air Force leadership expects senior civilians to be mobile (1). The validation survey responses indicate that many of the senior civilian logisticians do not agree that mobility is important. The implications are twofold. First, many qualified senior civilian logisticians may be unwilling to geographically relocate to fill senior positions. It is therefore possible the best qualified individuals would not volunteer or be selected to fill some of the key senior positions. Second, the attitude of these GM-15 logisticians towards mobility may have a "trickle down" effect. If a senior civilian logistician

does not feel mobility is important and is unwilling to relocate, he may pass this attitude down to his subordinates. This attitude transfer could make it difficult for the senior Air Force leadership to implement geographic mobility policies.

The validation respondents also did not agree that senior civilian logisticians should possess a masters degree. Their mean response, 2.98, indicates they are relatively neutral towards the importance of a masters degree. However, over half the validation respondents possess a masters degree. Their neutral response towards this statement may not indicate that they believe the degree is not valuable, but rather that a masters degree should not be made a firm requirement for promotion or assignment to senior logistician positions.

It is interesting to note that for each subject where the Delphi and validation respondents agreed, the mean validation response was less than the mean Delphi response. Several factors may have contributed to this phenomenon. First, the mean response may be lower because of the larger number of validation respondents. Second, although the GM-15s are certainly highly competent, most of them do not possess the experience or the expertise of the Delphi experts. They may not possess as strongly held beliefs as the senior policy makers who composed the Delphi survey group. Finally, it may have been apparent to the GM-15s that they

were being evaluated against the very statements on which they were indicating agreement or disagreement. For that reason, they may have avoided indicating strong agreement with statements which supported qualifications they themselves did not possess.

The validation respondents were not asked about their agreement on the inclusion of the personal qualities and professional skills category. This would not yield very meaningful responses since the respondents would not know what the individual qualities and skills were. Instead, the respondents were asked to allocate 100 points among the different qualities and skills, just as the weighting experts had done. The validation respondents' opinion of the relative importance of the different qualities and skills was deemed to be more valuable information than their opinion of the value of personal qualities and professional skills as general categories. Their mean weightings for personal qualities are shown in Table 34.

The validation respondents' rankings of personal qualities differed slightly from the weighting survey rankings shown in Table 25. A Spearman Rank test was therefore performed to determine whether these rankings were similar to the weighting survey rankings. The computed Spearman rs was .86, which did not exceed the critical value of rs at the .01 significance level but was greater than the critical value of rs at the .05 significance level, .71 (25:210).

Table 34. Ideal Personal Qualities Weightings --
Validation Survey

Rank	Personal Quality	Weighting
1	Leadership	17.3
2	Integrity	16.6
3	Common Sense	15.7
4	Communication	13.6
5	Management	12.4
6	Initiative	12.4
7	Dedication	11.0
8	Other Quality	1.0

Consequently, the null hypothesis that the variables are not associated can be rejected. The validation survey rankings are statistically similar to the weighting rankings. Therefore, the GM-15 logisticians' responses support the inclusion of the personal qualities category.

The validation respondents also allocated 100 points among the different professional skills. Their mean response is displayed in Table 35.

The validation survey rankings for professional skills were slightly different from the weighting survey rankings in table 28, so another Spearman Rank test was performed. The computed rs value, .94, was equal to the critical value for rs at the .01 significance level and greater than the critical value at the .05 level, .83. The null hypothesis

Table 35. Ideal Professional Skills Weightings --
Validation Survey

Rank	Professional Skill	Weighting
1	Job Knowledge	19.2
2	Problem Solving/Systems Viewpoint	18.9
3	Planning Ability	17.6
4	Resourcing Ability	16.7
5	Analytical Techniques	13.1
6	Thorough Staff Work	12.5
7	Other Skill	1.7

that the two variables are not associated can be rejected
(25:210). The validation survey rankings are statistically
similar to the weighting survey rankings. Therefore, the
GM-15 logisticians' responses support inclusion of the
professional skills category.

Model Dimensions. The GM-15 logisticians were asked an
additional question to validate the experts' opinions of the
relative importance of the model dimensions. The GM-15s
were asked what contributed most to their success --
experience, education and training, or professional quali-
ties. The results are displayed in Table 36. The respon-
dents were also asked to explain their response to this
question. Their comments are included in Appendix F.
Experience contributed most to the success of 48 percent of
the validation respondents. It was followed by professional
qualities which was selected by 43.1 percent of the respon-

dents. The dimension of education and training was not
nearly as important, being selected by only 8.9 percent of
the respondents. These results confirm those obtained from
the weighting survey. Experience is seen as the most
important requirement for the senior civilian logistician
with professional qualities or attributes somewhat less
important.

Table 36. Most Important Model Dimension --
Validation Survey

Dimension	Frequency	Percent
Experience	59	48.0
Professional Qualities	53	43.1
Education and Training	11	8.9
Total	123*	100.0

* 4 respondents did not answer this question.

Summary of Validation. The GM-15 logisticians vali-
dated most of the higher level model components. They indi-
cated that experience was the most important dimension,
followed by professional attributes, then education and
training. They confirmed the validity of eight model cate-
gories: assignments in logistics, advanced positions, PCE,
PME, involvement in professional logistics organizations,
technical competence, personal qualities, and professional
skills. They did not agree that mobility was important to
senior civilian logisticians, and they were neutral about

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the importance of a masters degree. Consequently, the categories of mobility and college degrees were not validated by the GM-15s currently filling senior civilian logistician positions.

These results do not necessarily mean that the mobility and college degree categories are not valid requirements for senior civilian logisticians. As suggested before, the respondents' neutral response towards the requirement for a masters degree may indicate they do not wish it to become a firm requirement. Outstanding logisticians could be overlooked for selection to senior civilian logistician status if a masters degree was a prerequisite for promotion. Further research should be performed to more accurately assess the GM-15 logisticians' attitudes and opinions toward advanced academic degrees.

The validation respondents' rejection of the mobility category also does not necessarily mean mobility is not a valid requirement for the ideal senior civilian logistician. Throughout this study the experts have voiced complaints against "mobility for mobility's sake." Many of them have expressed the opinion that mobility should be the result of a specific need of the individual or the Air Force. The validation respondents may not support the requirement for mobility because they perceived that the statements in the survey advocated mobility for the sake of mobility. They may not have regarded mobility as a desirable avenue by

which a civilian logistician broadens his base of experience. Furthermore, the GM-15 logisticians do not have to agree with the concept of mobility or be mobile themselves for mobility to be a valid requirement. In 1988, the Secretary of the Air Force sent a memorandum to all senior career civilian employees to reemphasize the importance of mobility (1). It is evident the senior leadership of the Air Force believes mobility is a valid requirement for senior civilian logisticians.

Although the GM-15 logisticians did not validate all the model categories, they were evaluated on their fit to the entire model during the last phase of this research.

GM-15 Evaluation Against the Model

In the final phase of this research, the validation respondents were evaluated against the AFIT Civilian Model. Based on a possible score of 100 points, the respondents received points for every element or category for which they possessed the necessary qualifications. The element and category percentages obtained from the weighting survey were rounded off to the nearest tenth of one percent. As a result of this rounding, the highest possible model score was actually 100.2 points. A dichotomous scoring system was used to evaluate the respondents. This meant that the validation respondents either did possess the quality or characteristic, or they did not. The scoring rules were outlined in Chapter III.

During the Delphi survey, a question was raised about whether two requirements could realistically be attained. The Delphi experts believed a senior civilian logistician should ideally have experience in three logistics disciplines, but established a threshold of two or more as more realistic. Similarly, they believed that a senior civilian logistician should ideally be technically competent in three logistics functional areas, but that competence in two or more could realistically be achieved. These two requirements were investigated prior to assigning final model scores to the validation respondents. The frequency distributions of logistics disciplines and functional areas were computed and analyzed. The results suggested that experience in two logistics functional areas was realistic. Experience in two disciplines was the modal response for this group, with 36 respondents possessing this level of experience. If the threshold had been set at three disciplines, 48 individuals would not have met the ideal criteria. These results suggest the Delphi experts were correct in their assessment of the number of disciplines in which a senior civilian logistician could realistically gain experience.

The relationship between ideal and realistic technical competence was also investigated. When held to the ideal number of functional areas in which a senior civilian logistician should be technically competent, 115 respondents, or

91 percent, met those ideal requirements. As a result, the respondents were compared to the more stringent ideal standard of three functional areas. Once these determinations were made, the individual model scores were computed.

Research Question Five

The individual model scores were computed using the SPSSx statistical package. Descriptive statistics were computed and several statistical tests were performed on the data to answer research question five:

How well do grade GM-15 senior civilian logisticians meet the model criteria? Are there differences among them that can be explained by job series or other factors?

Model Scores. The GM-15 logisticians did not "fit" the model very well. The breakdown of average dimension and category scores is shown in Table 37. The average model score was 67.3 with a standard deviation of 11.0. Not one individual obtained the top model score of 100.2. The distribution of model scores is displayed in Figure 5.

Dimension Scores. The respondents did not score well on the model dimensions either. The mean experience score was 29.3 out of a total possible score of 40. Eleven individuals obtained the top experience score of 40 points. The mean professional attributes score was 21.1. No one obtained the top professional attributes score of 35 points. The mean education and training score was 16.9 points out of a possible 25.2 points. Twenty six individuals received

Table 37. Average Model, Dimension, and Category Scores

Dimension/Category	Mean Score	Std. Dev.	Min. Score	Max. Score	Max. Possible
Model Score	67.3	11.0	39.6	91.1	100.2
Experience	29.3	7.4	3.8	40.0	40.0
Professional Attributes	21.1	3.1	12.3	27.1	35.0
Education and Training	16.9	6.3	0.0	25.2	25.2
Assignments in Logistics	15.2	3.9	3.8	18.9	18.9
Advanced Positions	11.0	5.3	0.0	13.8	13.8
Mobility	3.2	3.6	0.0	7.3	7.3
College Degree	8.9	3.7	0.0	12.0	12.0
PCE	6.1	3.8	0.0	8.5	8.5
PME	1.9	2.3	0.0	4.7	4.7
Personal Qualities	5.1	1.7	1.4	8.8	11.5
Technical Competence	10.3	1.9	3.1	10.9	10.9
Professional Skills	4.5	1.3	0.0*	7.4	8.5
Professional Logistics Organization Involvement	1.2	1.3	0.0	4.1	4.1

* Individual left section blank

the top education and training score of 25.2. The distributions of the dimension scores are displayed in Figures 6 through 8.

Category Scores. Within the experience dimension, the responders achieved high scores on all categories but mobility. The average assignments in logistics score was
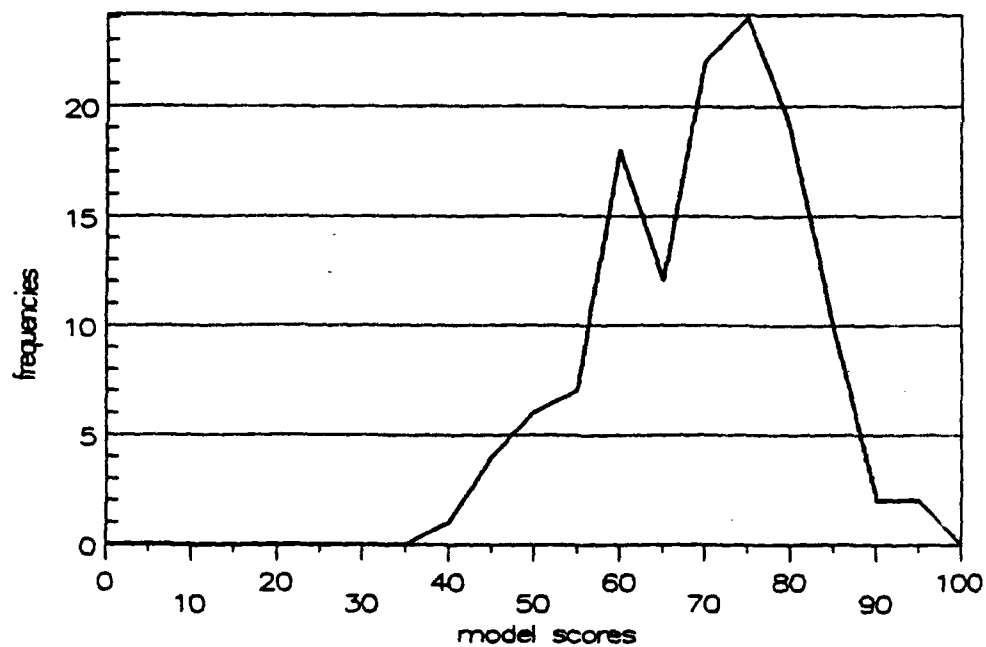
Figure 5.   Frequency Distribution of GM-15 Model Scores
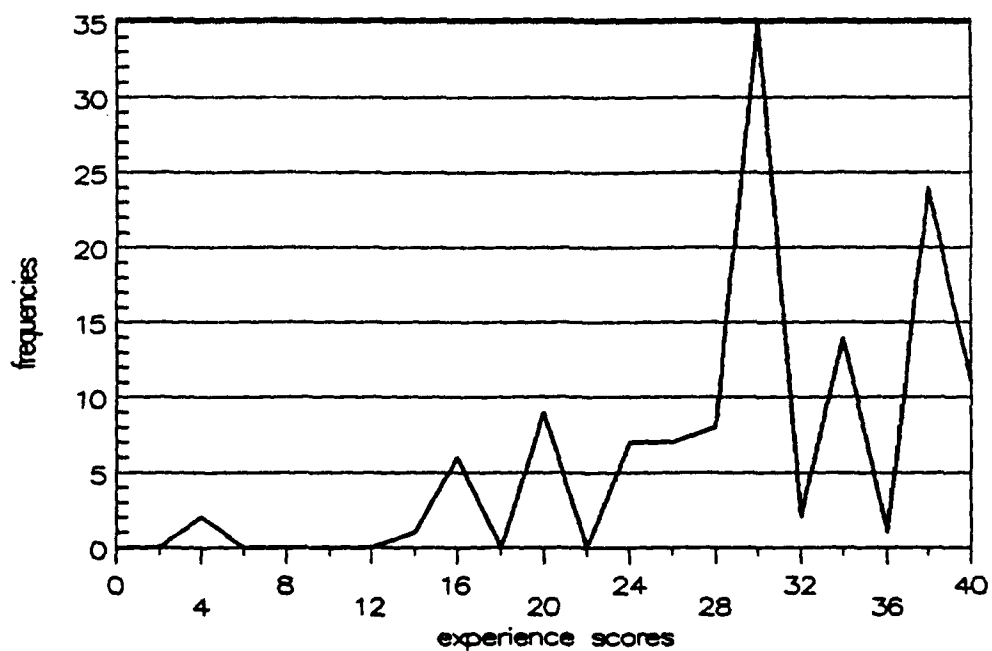
Figure 6.   Frequency Distribution of GM-15
Experience Scores

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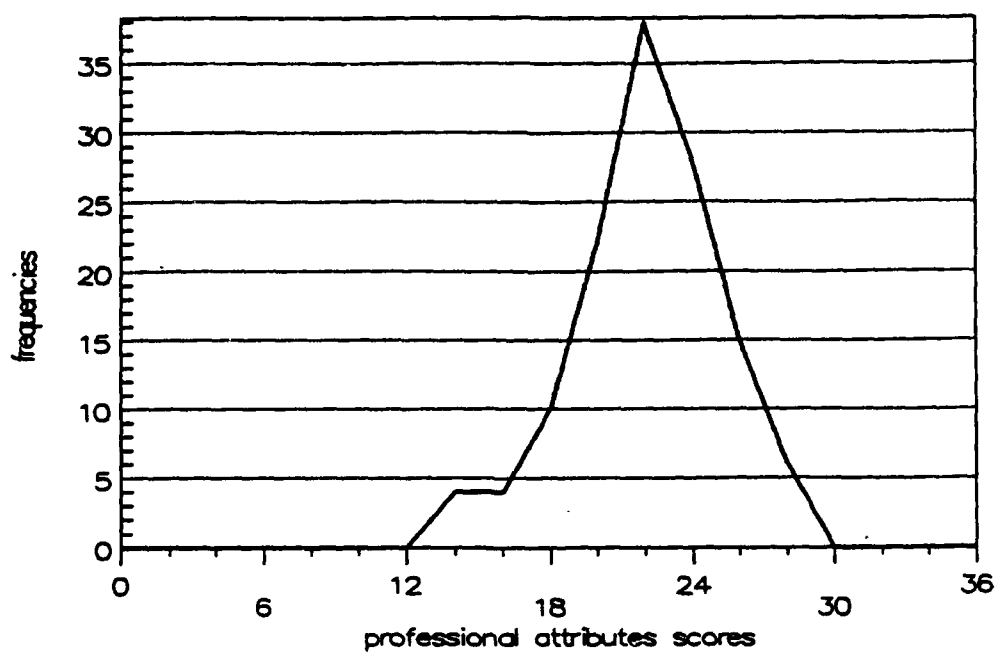
Figure 7. Frequency Distribution of GM-15
Professional Attributes Scores

Figure 8. Frequency Distribution of GM-15
Education and Training Scores

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15.2 points, about 80 percent of the 18.9 points possible. The validation respondents also scored well on advanced positions with an average score of 11.0 out of 13.8 points. The respondents did not score as well in the mobility category. This category had no subordinate elements, so the respondents could score either 0 or 7.3 points. Their mean score was 3.2 out of 7.3. Table 38 shows the frequencies of responses for this category. About 44 percent of the respondents met the mobility criteria of two or more moves. Almost 40 percent of the respondents had never moved.

This low mobility rate may also help to explain why the GM-15 logisticians did not validate the mobility category. Many of them have reached senior positions without geograph- ically relocating. Because many of them have been success- ful without moving, they may feel mobility is unnecessary or unimportant. Many of them may also be unwilling to move and therefore are against mobility.

Table 38. Mobility Frequencies for GM-15 Logisticians

Number of moves	Frequency	Percent	Cum. Percent
0	47	37.0	37.0
1	24	18.9	55.9
2	15	11.8	67.7
3	18	14.2	81.9
4 or more	23	18.1	100.0

The respondents did not score very well in three of the categories of the professional attributes dimension. Their mean score for personal qualities was 5.1 out of 11.5 points. Their mean score for professional skills was also low; they scored an average of 4.5 out of 7.4 points. This does not necessarily mean the current GM-15 logisticians are deficient in the personal qualities and professional skills required of the ideal senior civilian logistician. The scoring was based on the individual's relative possession of the qualities and skills. Furthermore, as explained in Chapter III, the respondents were evaluated against the grand mean score for each of the different qualities and skills elements. It is likely that many respondents possess all of the personal qualities and professional skills necessary for the senior civilian logistician. However, they possess those qualities and skills to varying degrees, and their category scores reflect that.

Involvement in professional logistics organizations was another weak category for the respondents. Their average score was 1.2 out of 4.1 points.

The respondents scored very well in the technical competence category. Their mean score was 10.3 out of a possible 10.9 points. All but 12 respondents met the qualifications for a perfect score in this category. The perfect score indicated they were technically competent in system, item, or program management and two other functional areas.

The respondents scored well in the college degree category. Their mean score was 8.9 out of 12 points. They also scored well in the PCE category. The mean PCE score was 6.1 out of 8.5. In fact, 71.7 percent of the respondents had completed a PCE course at AFIT, a civilian institution, or both. However, many of them had not completed PME. Their mean PME score was 1.9 points out of a possible 4.7 points. Only 39.4 percent of the respondents had completed any PME course above Squadron Officers School.

Element Scores. Element scoring was based on a dichotomous scoring rule. Consequently, the number or percentage of individuals who earned credit for each element provides the best indicator of the group's qualifications. The element frequencies and percentages are displayed in Table 39.

Under the category of assignments in logistics, most of the respondents had experience in wholesale and acquisition logistics. Over 96 percent of the respondents had experience in wholesale logistics, and 76.4 percent had experience in acquisition logistics. Almost 45 percent claimed experience in international logistics. About one third had experience in each of the other logistics disciplines and assignments in operational commands. Wholesale and acquisition logistics were believed to be the most important disciplines by the Delphi experts. The validation respondents appear to be well qualified in the assignments in logistics

Table 39. Dichotomous Element Frequencies

Element	Number Credited	Percentage
Wholesale Logistics	123	96.9
Acquisition Logistics	97	76.4
Assignment in Oper. Command	37	29.1
Retail Logistics	38	29.9
Combat Logistics	41	32.3
International Logistics	57	44.9
Management/Supervisory Pos.	103	81.1
Staff Experience	97	76.4
System/Item/Program Mgt.	123	96.9
Maintenance Competence	99	78.0
Engineering Competence	67	52.8
Procurement Competence	74	58.3
Logistics Plans Competence	120	94.5
Supply Competence	88	69.3
Transportation Competence	56	44.1
Active Member - Professional Logistics Organization	25	19.7
Conference Presenter/Panel Leader/Moderator	36	28.3
Conference/Seminar/Symposia Attendee	64	50.4
Bachelors Degree	116	91.3
Masters Degree	66	52.0

category since most of them possess experience in wholesale and acquisition logistics.

The validation respondents also possessed considerable experience in advanced positions. Over 80 percent of the respondents had management or supervisory experience, and 76.4 percent had staff experience at the division level or higher. The respondents obtained most of that experience in logistics; at least 70 percent of the experience had to be obtained in logistics for them to receive credit for their experience in these advanced positions.

A large number of individuals received credit for technical competence in the different logistics functional areas. Most respondents rated themselves competent in system, item, or program management and logistics plans. Almost 97 percent of the respondents were competent in system, item, or program management, and 94.5 percent were competent in logistics plans. About 70 percent rated themselves competent in supply. Fewer respondents were technically competent in the other disciplines; 58.3 percent were competent in procurement, 52.8 percent were competent in engineering, and 44.1 percent in transportation.

Few respondents had participated in professional logistics organizations. About 19 percent were active members, and 28.3 percent had served as presenters, moderators, or panel leaders at conferences, seminars, or symposia. However, half the respondents had attended conferences,

seminars, or symposia sponsored by professional logistics organizations. An explanation for this low level of participation may be that senior civilian logisticians do not feel they now have the time to be active members of professional logistics organizations. However, they may attend the conferences, seminars, and symposia which are educational in nature and could relate directly to their job responsibilities.

Although the validation respondents were neutral on the importance of a masters degree, as mentioned previously, many of them possessed college degrees. Over 90 percent of the GM-15 logisticians had earned a bachelors degree, and 52 percent of them had earned a masters degree. Their neutral response towards a masters degree may stem from the belief that the degree should not be mandatory. While there has been an implied requirement for senior military officers to possess a masters degree, currently there is no requirement for civil service logisticians to possess any college degree.

The personal qualities and professional skills were scored differently from the other elements. Respondents received credit for a quality or skill if they rated themselves equal to or higher than the group mean weighting. The mean ratings are displayed in Table 40. The respondents indicated integrity and common sense were their strongest qualities. A problem solving/systems viewpoint and job

Table 40. Average Personal Quality and Professional Skill Weightings -- Validation Respondents

		<u>Mean Weight</u>
Qualities	Integrity	16.0
	Leadership	15.6
	Common Sense	15.7
	Initiative	13.2
	Communication	12.9
	Dedication	12.6
	Management	12.5
	Other Quality	1.2
Skills	Problem Solving/Systems Viewpoint	19.5
	Job Knowledge	18.5
	Planning Ability	16.4
	Resourcing Ability	15.6
	Analytical Techniques	13.9
	Thorough Staff Work	13.7
	Other Skill	1.5

knowledge were their strongest skills. It is interesting to note that the respondents indicated leadership was the most important quality for the ide?l senior civilian logistician and integrity was second, yet they rated themselves strongest in integrity, followed by common sense. In the professional skills category, the respondents rated themselves strongest in job knowledge, yet that was their

choice for the second most important skill for the ideal senior civilian logistician.

Factors Which Contribute to Differences in Scores. Three factors were examined to determine if they contributed to the differences in respondents' scores. The first factor was job series. It was hypothesized that the mean scores for each job series would be different. To test for a statistical difference, the Kruskal-Wallis H test was performed. The null hypothesis for this test was that the probability distributions for the job series groups were identical (18:757). Prior to performing this test, the different supply job series (2003 and 2010) were grouped together because there were so few respondents in each individual series. The 1101, 1910, and 2100 job series were also grouped together. Although these series are not similar, there was no alternative but to group them to achieve the minimum cell size for the test. The model and dimensions scores were tested to determine if differences existed between the job series groupings. The results of the tests are shown in Table 41. The null hypothesis could not be rejected for any of the tests. Therefore, no significant differences exist between the score distributions for the different job series groupings.

These results suggest that the model applies equally to the different logistician job series at the senior level. The model does not appear to favor any one particular job

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Table 41. Kruskal-Wallis H Test Results -- Scores by Series

Test	Chi-Square Value	Sig.	Conc.
Model score by series	2.44	.88	no difference
Experience score by series	2.17	.90	no difference
Professional attributes score by series	2.53	.86	no difference
Education score by series	2.77	.84	no difference

series. More importantly, the results suggest that the senior civilian logisticians in the different job series are equally qualified as logisticians. It dispels the myth that senior civilian logisticians in some of the more specialized job series, such as transportation, are less qualified total system logisticians than those individuals in more generalized job series, such as logistics management.

The data were also tested to determine if model scores differed between specialists and generalists. The validation respondents were asked to indicate whether depth or breadth of experience was more important for the individual who would replace them in their current position. Those who indicated depth of experience were classified as specialists. Those who indicated breadth of experience were classified as generalists. The t-test was used to test if the mean scores for specialists differed from the mean scores for generalists. Because it was possible that experience would differ between the specialists and generalists, the

mean model and experience scores were tested. Homogeneity was not assumed, so the separate variance estimates were used instead of the pooled variance estimates (21:80).

The results of the t-tests showed there was no significant difference between the mean scores of specialists and generalists (see Table 42). This confirms the results suggested by the Kruskal-Wallis H tests performed for different job series groupings. The model does not favor generalists over specialists and the two groups score equally well against the model.

Table 42. T-Tests for Differences Between Specialist and Generalist Scores

Score	Specialist Mean	Generalist Mean	T Value	Sig.	Conclusion
Model	63.6	67.9	1.58	.13	no diff.
Exper.	28.5	29.5	.62	.54	no diff.

A final set of statistical tests was performed to determine if a difference existed between the scores of those who were mobile and those who were not mobile. One reason for moving individuals is to broaden their experience base. It was hypothesized that those who were mobile would have more experience and thus higher scores. The t-test was performed to determine whether mean scores differed between those who were mobile and those who were not. The individual mobility scores were subtracted from the individual

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model and experience scores for these tests, so true differences in experience would be evident. The results are shown in Table 43. No significant differences in mean scores was found between the two groups.

Table 43. T-Tests for Differences Between Mobile and Non-Mobile Mean Scores (18:346)

Score	Mobile Mean	Non-Mobile Mean	T Value	Sig.	Conclusion
Model	64.4	63.8	-.32	.75	no difference
Experience	25.7	26.4	.60	.55	no difference

The previous t-tests were based on the Delphi experts' definition of mobility. The Delphi experts categorized those who had moved two or more times as mobile. Since this categorization is subject to opinion, another test was performed. The Kruskal-Wallis H test was used to determine whether the model score probability distributions differed by the number of moves. The results are displayed in Table 44. Again, the results show there is no difference in model scores based on mobility. The model score probability distributions for GM-15 senior civilian logisticians are remarkably similar when the scores are grouped by number of moves.

Three factors were analyzed to see if they contributed to differences in model and dimension scores. The results indicated that job series, specialist/generalist status, and

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Table 44. Kruskal-Wallis H Test Results --
Scores by Mobility

Number of moves	Mean Rank	Chi-Square Value	Sig.	Conc.
none	62.7	2.51	.64	no difference
one	63.3			
two	55.6			
three	75.2			
four or more	64.1			

mobility do not account for the differences in GM-15 senior civilian logistician scores. The model and dimension score probability distributions were the same for each job series grouping. The mean model and experience scores did not differ between GM-15 logisticians based on self-rated status as specialists or generalists. The mean model and experience scores did not differ between mobile and non-mobile GM-15 logisticians. Furthermore, the respondent model score probability distributions did not differ based on number of moves. There may be factors which account for the differences in model scores. However, further research is needed to determine those factors.

Research Question Six

As a group, the GM-15 senior civilian logisticians did not score very well against the model. Since these individuals form the pool from which future SES logisticians will be drawn, their low scores may have serious implications.

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However, not all GM-15 logisticians will be promoted to the top senior positions. Based on the 2 May 1988 listing of senior civilian logisticians obtained from AFCPMC, there are about 20 SES positions(7). Therefore, the top twenty GM-15 logisticians are the most likely candidates for those positions. It should therefore be critical that those top twenty GM-15 logisticians possess the qualities, characteristics, and background outlined by the model. At the other end of the spectrum are twenty GM-15 logisticians who scored below their peers. By definition, they have been successful; they have reached very responsible senior positions. It is also important for those individuals to score fairly well against the model because they influence several subordinates. They serve as role models to aspiring senior logisticians who look to them for career guidance. Therefore, it would be beneficial if these GM-15 logisticians reflected the model requirements. Concerns about the qualifications of the top and bottom twenty GM-15 logisticians were the basis for research question six:

What are the characteristics of those GM-15 senior civilian logisticians who score very well against the model? What are the characteristics of those who score very poorly?

Descriptive statistics for the top twenty and bottom twenty GM-15 logisticians were obtained to answer these questions. The two groups are described separately.

Top Twenty GM-15 Logisticians. The top twenty valida-
tion respondents were well qualified. Their model scores
range from 77.9 to 91.1 points with a mean score of 82.5.
Six of them attained perfect experience scores and twelve of
them attained perfect education and training scores. They
come from a wide range of job series. Ten of them are 346s,
3 are from the 2000 series, 2 are from the 2100 series, 1 is
a 301, 1 is a 345, 1 is an 801, 1 is a 1601, and 1 is a
1910. Table 45 provides the descriptive statistics for the
model, dimension, and category scores of the top twenty GM-
15 logisticians. Table 46 compares the mean model and
component scores for the population and the top and bottom
twenty GM-15 logisticians.

Experience. The respondents were well qualified
in the experience dimension. Their mean experience score
was 36.5 points out of 40. They had a wide variety of
assignments, scoring an average of 17.2 points out of 18.9
in that category. All of them had experience in wholesale
logistics, 18 had acquisition logistics experience, 12 had
combat logistics experience, 12 had international logistics
experience, and 7 had retail logistics experience. Half of
the individuals in the top twenty had experience in an
operational command. All individuals in the top twenty met
the criteria for experience in advanced positions. All of
them had staff experience at the division level or higher.
All of them had management experience as well. Furthermore,

Table 45. Descriptive Statistics -- Top Twenty GM-15 Logisticians

Dimension/Category	Mean Score	Std. Dev.	Min. Score	Max. Score	Max. Possible
Model Score	82.1	4.1	77.7	91.1	100.2
Experience	36.0	3.6	27.9	40.0	40.0
Professional Attributes	22.6	2.8	16.1	25.9	35.0
Education and Training	23.5	2.4	20.0	25.2	25.2
Assignments in Logistics	17.2	1.7	15.5	18.9	18.9
Advanced Positions	13.4	1.9	5.1	13.8	13.8
Mobility	5.5	3.2	0.0	7.3	7.3
College Degree	11.0	2.1	6.8	12.0	12.0
PCE	8.5	0.0	8.5	8.5	8.5
PME	4.0	1.7	0.0	4.7	4.7
Personal Qualities	5.8	1.1	3.4	8.0	11.5
Technical Competence	10.6	1.1	5.8	10.9	10.9
Professional Skills	4.6	1.4	1.0	7.2	8.5
Professional Logistics Organization Involvement	1.5	1.3	0.0	4.1	4.1

all of the top twenty GM-15 logisticians obtained at least 70 percent of that experience in the logistics career field. Most of the top twenty GM-15 logisticians were mobile; 15 had moved two or more times. The broad base of experience possessed by these individuals makes them well suited for senior positions.

Professional Attributes. The scores of the top twenty GM-15 logisticians were not as high in the

Table 46. Comparison of Population, Top Twenty, and Bottom
          Twenty Mean Model, Dimension and Category Scores

| | Mean Scores | | |
Component	Top 20	Population	Bottom 20
Model	82.5	67.3	49.2
Experience	36.5	29.3	18.2
Professional Attributes	22.8	21.1	18.9
Education and Training	23.2	16.9	12.2
Assignments in Logistics	17.2	15.2	11.1
Advanced Positions	13.8	11.0	5.3
Mobility	5.5	3.2	1.8
College Degree	11.0	8.9	7.8
PCE	8.5	6.1	3.0
PME	3.8	1.9	1.4
Personal Qualities	6.0	5.1	4.8
Technical Competence	10.6	10.3	9.5
Professional Skills	4.6	4.5	4.3
Professional Logistics Organization Involvement	1.6	1.2	0.3

professional attributes dimension as they were in
experience. Their mean score was 22.8 points out of 35.
They scored highest in the technical competence category.
Their mean score for technical competence was 10.6 out of
10.9 points possible. Nineteen reported themselves as com-
petent in system, item, or program management. Nineteen
individuals were competent in logistics plans, 18 in supply,
16 in maintenance, 12 in procurement, 9 in transportation,

and 9 in engineering. Their scores were comparatively lower in the personal qualities and professional skills categories; however, these categories expressed relative strength in the different qualities and skills. Their mean personal qualities score was 6.0 points out of 11.5, 0.9 points higher than the entire population mean (see Table 46). Their mean professional skills score was 4.6 points out of 8.5, 0.1 points higher than the population mean. Participation in professional logistics organizations was not high for this group. Their mean category score was 1.6 points out of 4.1 possible. Fourteen had attended conferences, symposia, or seminars sponsored by professional logistics organizations. Eight individuals had served as a presenter, moderator, or panel leader at those gatherings, and only five individuals were active members of a professional logistics organization. It may be that these senior logisticians feel they are too busy with the demands of their jobs to actively participate in professional logistics organizations.

Education and Training. The top twenty GM-15 logisticians were well qualified academically. Their mean education and training score was 23.2 points out of 25.2 possible. All had completed some sort of PCE, and 16 had completed a PME course at the level of Air Command and Staff College or higher. All individuals had earned a bachelors degree and 16 had earned a masters degree.

On the whole, the top twenty GM-15 logisticians were well qualified based on their fit to the model. They appear to be capable of taking on the responsibilities of the total system logistician. Some shortfalls in their qualifications were evident. Only half the individuals had experience in an operational command, yet they have strong potential to impact the operational community as they assume more senior roles. They are not very involved in professional logistics organizations. These organizations are one means of keeping in touch with new ideas and advances in technology. Mr. Mosemann supported involvement in professional logistics organizations for that reason (19:6). It is important for senior leaders to receive exposure to new ideas in logistics somewhere, if not through professional logistics organizations.

Bottom Twenty GM-15 Logisticians. The bottom twenty GM-15 logisticians were not well qualified based on their fit to the model. Their mean score was 49.2 points, with a range of 39.6 to 56.8 points. They came from a wide variety of backgrounds. Ten of them were in the 346 job series, 2 were 345s, 2 were 801s, 2 were 1101s, 2 were in the 2000 series, 1 was a 301, and 1 was a 1601. Table 47 shows the descriptive statistics for their model, dimension, and category scores. Table 46 compares their mean scores to the population and the top twenty GM-15 logisticians.

**Table 47. Descriptive Statistics -- Bottom Twenty
GM-15 Logisticians**

Dimension/Category	Mean Score	Std. Dev.	Min. Score	Max. Score	Max. Possible
Model Score	49.2	5.3	39.6	56.8	100.2
Experience	18.2	6.6	3.8	29.3	40.0
Professional Attributes	18.9	2.7	13.2	23.3	35.0
Education and Training	12.2	5.5	0.0	20.5	25.2
Assignments in Logistics	11.1	6.1	3.8	18.9	18.9
Advanced Positions	5.3	6.7	0.0	13.8	13.8
Mobility	1.8	3.2	0.0	7.3	7.3
College Degree	7.8	4.6	0.0	12.0	12.0
PCE	3.0	4.2	0.0	8.5	8.5
PME	1.4	2.2	0.0	4.7	4.7
Personal Qualities	4.8	1.7	2.0	7.3	11.5
Technical Competence	9.5	2.9	3.1	10.9	10.9
Professional Skills	4.3	1.6	0.0*	6.4	8.5
Professional Logistics Organization Involvement	0.3	0.9	0.0	4.1	4.1

* Individual did not complete this section

Experience. The bottom twenty GM-15 logisticians
did not possess a broad base of experience. Their mean
experience score was 18.2 points out of 40 possible. They
were strongest in the assignments in logistics category,
with a mean score of 11.1 out of 18.9. Eighteen of them had
wholesale logistics experience, 10 had acquisition logistics
experience, 5 had combat logistics experience, 4 had retail

logistics experience, and 4 had international logistics experience. Only five had an assignment in an operational command. Most did not meet the requirements to receive credit for management/supervisory and staff experience. Their mean score for advanced positions was 5.3 out of 13.8 points possible. Five of these individuals met the requirements for mobility; nine of them had never moved.

Professional Attributes. The bottom twenty GM-15 logisticians did not score very high in the professional attributes dimension, but neither did the study group, on the average. The bottom twenty respondents' mean professional attributes score was 18.9 out of 35 points possible. The mean score for the GM-15 population was 21.1 (see Table 46). The bottom twenty GM-15 logisticians were technically competent in several logistics functional areas. Their mean score in that category was 9.5 points out of 10.9. Nineteen individuals rated themselves technically competent in system, item, or program management. Eighteen were technically competent in logistics plans, 14 were competent in supply, 12 were competent in maintenance, 10 were competent in procurement, 10 were competent in engineering, and 8 were competent in transportation. They did not score as well in the personal qualities and professional skills categories. Their mean personal qualities score was 4.8, not far below the group mean of 5.1. Their mean professional skills score was 4.3, compared to the entire group mean of 4.5 points.

Their level of participation in professional logistics organizations was very low. Their mean score for this category was 0.3 points out of 4.1 possible. Only one individual was an active member of a professional logistics organization. Three had attended conferences, symposia, or seminars sponsored by professional logistics organizations, and one individual had served as a presenter, moderator, or panel leader at those functions.

Education and Training. The bottom twenty GM-15 logisticians were not well qualified academically. Their mean education and training score was 12.2 out of 25.2 points possible. Seven individuals had completed some sort of PCE. Six individuals had completed a PME course above the level of Squadron Officers School. Their mean college degree score was 7.8 out of 12 points. Sixteen had earned a bachelors degree and nine had earned a masters degree.

As a group, the bottom twenty GM-15 logisticians did not fit the model very well. Their strongest qualification was technical competence. Sixteen of them met the requirements to achieve a perfect score in this category. Although they may not have held positions in a wide variety of logistics disciplines, they have achieved technical competence in several of the logistics functional areas. Their shortfalls in other areas may be compensated for by their technical competence.

Summary

This chapter described the results of the four phases of the research process. A descriptive model was developed based on the results of a Delphi survey of 30 logistics experts. A quantitative model was developed based on the weightings assigned to each model component by another panel of 44 logistics experts. The resulting model placed heavy emphasis on experience, followed by professional attributes and education and training. This model was validated through a census of all GM-15 logisticians. The validation respondents agreed with all of the model dimensions and categories with the exception of two. They did not feel mobility was necessary for senior civilian logisticians and they were neutral towards the importance of a masters degree. Finally, the qualifications of the GM-15 logisticians who responded to the validation survey were examined to determine how well they "fit" the model. The respondents did not fit the model very well. However, the top twenty GM-15 logisticians were highly qualified based on their fit to the model. They show strong potential to fill more senior positions in the future.

The next chapter summarizes the answers to the research objectives and questions. The issues raised by the answers to these questions are also discussed. Next, the contributions of this research are examined. Finally, recommendations for action and future research are presented.

V. Conclusions and Recommendations

Air Force leaders have expressed concern about the qualifications of today's senior logisticians. Lieutenant General Marquez believed total systems logisticians were necessary. Logisticians should understand how all the different logistics disciplines contributed to the entire logistics system (17:2). More recently, Mr. Mosemann has urged logisticians to become professionals. He believed that a professional logistician should have a broad gauged background in all the facets of logistics (19:6-7).

In spite of the senior level concern over logistician development, Air Force civilian logisticians lack the necessary guidance to become total systems logisticians. No consensus definition of the ideal requirements of a senior civilian logistician exists. The LCCEP has attempted to develop professional logisticians, but much work is yet to be done in defining the requirements for the professional logistician. During the second round Delphi survey, General Marquez wrote

> The early history of LCCEP [was] painful, as so much resistance to the concept existed and so many obstacles were raised to its implementation. What we had was a career progression pattern which was essentially random, with chance playing more a part in professional development than purpose. There was not then and, now only [in] 'rudimentary' form, any attempt to describe what a senior 'loggie' should have under his belt in terms of job experience, training, or education [see Appendix D for further comments].

The purpose of this study was to develop both a descriptive and a quantitative model of the qualities, characteristics, and background required of the ideal senior civilian logistician and to determine how well today's senior civilian logisticians measure up to that model.

Most prior research on senior logisticians has focused on the senior military logistician. In 1985, Captain Overbey used the Delphi method to achieve expert consensus on the ideal requirements for senior military logisticians. Based on the results of his Delphi survey, he developed a model to describe the ideal qualities, characteristics and background for senior civilian logisticians. Captain Zavada continued his work the following year. She rearranged the components of Overbey's model to develop the AFIT Military Model and surveyed another panel of experts to weight the model components. She performed a census of Air Force colonels to determine how well they fit the weighted AFIT Military Model. She found that, as a group, the colonels did not fit the model very well (29:104). The following year, Mr. Nancarrow began the work of developing a model to describe the ideal requirements of the senior civilian logistician, much as Overbey had done for military logisticians. The results of Nancarrow's interviews with 24 expert senior logisticians formed the foundation for this research. Nancarrow's experts believed the top two levels of the AFIT Military Model were also applicable to senior civilian

logisticians and they suggested several potential third level model elements be added to the model (20:154).

The current research was conducted in four phases: developing the model, weighting the model, validating the model, and comparing the population to the model.

During the first phase, 30 expert senior logisticians participated in two rounds of a Delphi survey designed to achieve consensus opinion of the ideal model dimensions, categories, and elements. The results of the Delphi survey were used to develop a descriptive model of the requirements for the ideal senior civilian logistician.

During the second phase of this research, another panel of 44 expert senior logisticians assigned relative weights to each of the model components. Starting at the top level, they allocated 100 points among the model dimensions, according to their relative importance to the ideal senior civilian logistician. They continued this process for the model categories and elements. Individual component weightings were then computed so each component was weighted according to its contribution to the whole model. The resulting quantitative model is known as the AFIT Civilian Model.

During the third phase, a validation survey was sent to 166 Air Force GM-15 logisticians. The purpose of the survey was twofold. It was designed to determine whether the GM-15 logistician population agreed with the Delphi experts on the

importance of the model dimensions and categories as requirements for the ideal senior civilian logistician. It was also designed to gather information to assign model scores to each GM-15 logistician for use in the fourth phase of the research.

During the fourth phase, the average model scores were examined to determine how well today's senior civilian logisticians compare to the model. The scores were examined to determine if job series, specialist/generalist status, or mobility contributed to differences in individual model scores. In addition, the characteristics of the top and bottom 20 GM-15 logisticians were examined to determine what their qualifications were and to see if any differences existed between these two groups.

The information gathered during these four phases of research provided the necessary information to answer the six research questions proposed in Chapter I. Each question is addressed separately on the following pages.

Research Question One:

Can the top two levels of the model Nancarrow suggested be verified by expert logisticians?

The Delphi experts in this research verified each of the model dimensions and categories Nancarrow's experts suggested. Nancarrow's experts suggested the top two levels of the AFIT Military Model, called dimensions and categories, were also applicable to senior civilian logisticians. The

model dimensions Nancarrow recommended were experience, professional attributes, and education and training. The model categories were assignments in logistics, advanced positions, personal qualities and characteristics, technical competence, professional involvement, college degrees, Professional Continuing Education (PCE), and Professional Military Education (PME) (20:154).

Ninety percent of the Delphi experts agreed that Nancarrow's model framework provided the basis for a model of the ideal senior civilian logistician. Two additional model categories were added based on the recommendations of Nancarrow's experts and were also verified by the Delphi experts in this research. Mobility was added as a category of experience based upon the recommendations of 62 percent of the Delphi experts. The experts believed a candidate's mobility history and attitude should be factors in selection for senior civilian logistician status. They also believed senior civilian logisticians should be mobile. Professional skills was also added as a category of professional attributes, separate from the personal qualities category. The Delphi experts recommended six professional skills and seven personal qualities that were important to the senior civilian logistician.

Research Question Two:

What specific third level elements should be added to the model?

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Several elements were added to this model framework, based on the consensus opinion of the Delphi experts. Figure 9 shows the relationship of those elements to the model.

Under assignments in logistics, all five logistics disciplines and an assignment in an operational command were added. The experts agreed that experience in three disciplines was ideal. However, they suggested that experience in two disciplines was a more realistic requirement based on typical career patterns and reassignment policies.

Under advanced positions, the experts recommended a senior civilian have management or supervisory and staff experience. While the experts could not agree on measurable criteria for the management and supervisory experience, they were emphatic about the need for the senior civilian logistician to possess this experience. In the area of staff experience, the Delphi experts recommended that the senior civilian logistician should have had staff experience at the division level or higher. The experts also believed that most of the logistician's experience in these two types of advanced positions should be obtained in logistics. The Delphi experts suggested that 70 percent of the senior civilian logistician's experience in advanced positions should be obtained in the logistics field.

No elements were listed under the mobility category. However, the Delphi experts suggested that, as a minimum,
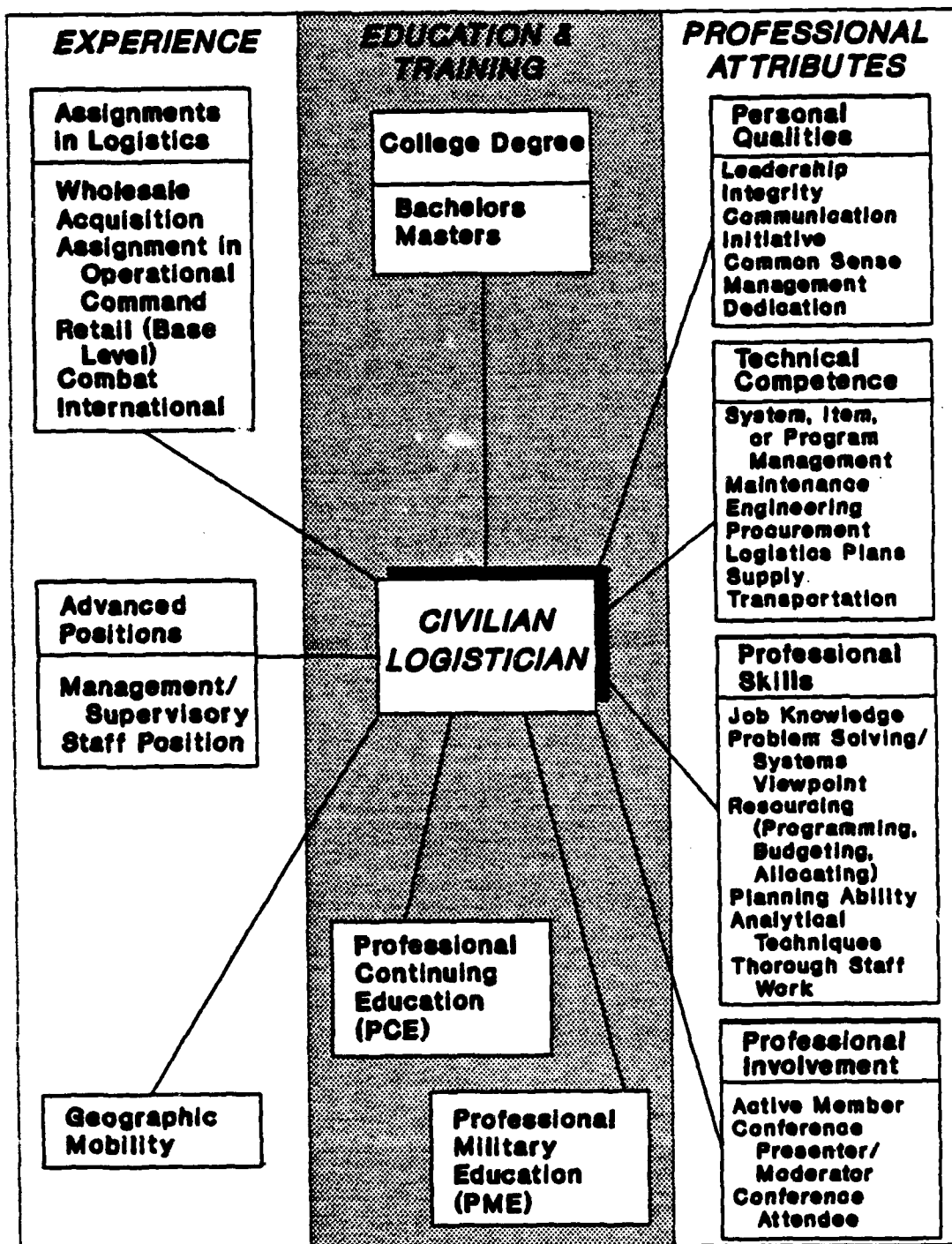
Figure 9. AFIT Civilian Model

two geographic moves were required for a senior civilian logistician to be considered mobile.

Under the college degree category, all of the Delphi experts supported the need for a senior civilian logistician to possess a bachelors degree and 62 percent supported the need for a masters degree. The most highly recommended area for study for these degrees was Logistics Management.

There were no specific elements recommended under the PCE and PME categories. Many experts believed an individual's strengths and weaknesses would determine which PCE courses were most valuable, but they recommended several courses which they felt were valuable to the civilian logistician (see Appendix C for a complete listing). The experts also suggested that all PME courses, except Squadron Officers School, were valuable in the development of the senior civilian logistician.

Under the personal qualities category, the Delphi experts recommended seven elements which they identified as important to the senior civilian logistician. The seven qualities are leadership, integrity, communication, initiative, common sense, management, and dedication.

All seven logistics functional areas are listed as elements under the technical competence category. The Delphi experts recommended that senior civilian logisticians should ideally be technically competent in three functional

areas and that one of those areas should be system, item, or program management.

Six elements are included in the professional skills category. The Delphi experts believed job knowledge, a problem solving/systems viewpoint, resourcing ability, planning ability, analytical techniques, and thorough staff work were the most important skills for senior civilian logisticians to possess.

The Delphi experts agreed participation in professional logistics organizations was important. Their consensus response was that senior civilian logisticians should be active members of these organizations and should attend the conferences, symposia, and seminars sponsored by professional organizations. The experts also agreed that senior civilian logisticians should actively share their experience and knowledge by serving as presenters, moderators, or panel leaders at those conferences, symposia, and seminars.

Therefore, 33 specific third level elements were added to the AFIT Civilian Model.

Research Question Three:

What weightings do expert logisticians assign to the model dimensions, categories, and elements?

The weighting experts weighted each dimension, category, and element of the AFIT Civilian Model. The weighting experts believed experience was the most important model dimension. Experience was weighted approximately 40

percent, professional attributes was weighted 35 percent, and education and training was weighted about 25 percent.

The weighting experts believed assignments in logistics was the most important model category, weighting it 18.8 percent. Advanced positions was next in importance with a weighting of 13.8 percent. College degrees and personal qualities were weighted approximately evenly at 11.9 and 11.5 percent, respectively. Next in importance was technical competence which was weighted 10.9 percent. It was followed by professional skills and PCE, both weighted 8.5 percent. Mobility was next in importance with a weighting of 7.3 percent. PME and involvement in professional organizations were the least important categories and were weighted 4.7 and 4 percent, respectively.

Management and supervisory experience was the most important model element with a weighting of 8.7 percent. This confirms the importance of experience to the senior civilian logistician since this element alone was weighted higher than half the model categories. A bachelors degree was next most important with a weighting of 6.8 percent. It was followed by experience in wholesale logistics, a masters degree, and staff experience, weighted from 5.2 to 5.1 percent. The other elements had relatively small weightings ranging from 3.8 to 0.8. Their relative importance can be seen in Figure 9 where they are listed under their respective categories in order of importance.

The weightings of each model category and element are displayed in Table 48.

Research Question Four:

Do grade GM-15 senior civilian logisticians believe the dimensions and categories of the model are valid?

The GM-15 logisticians who responded to the validation survey agreed that experience was the most important dimension, followed by professional attributes, and education and training. They validated eight of the ten model categories also. The validation respondents agreed with the Delphi experts that assignments in logistics, advanced positions, PCE, PME, personal qualities, technical competence, professional skills, and professional involvement were valid and important categories of a model of the ideal senior civilian logistician. In addition, the validation respondents' rankings of the personal qualities and professional skills were statistically similar to the final rankings obtained from the weighting experts.

As a group, the validation respondents disagreed with the Delphi experts on the importance of mobility to the senior civilian logistician. The validation respondents did not believe that either mobility attitude or history should be factors in selection to senior civilian logistician status, nor did they believe that senior civilian logisticians should be mobile.

Table 48. Final Category and Element Weightings

Category	Element	Weight
Assignments in Logistics: 18.83	Wholesale	5.18
	Acquisition	3.77
	Operational Command	3.37
	Retail	2.64
	Combat	2.31
	International	1.56
Advanced Positions: 13.78	Management/Supervisory	8.68
	Staff Positions	5.10
College Degree: 11.90	Bachelors Degree	6.76
	Masters Degree	5.15
Personal Qualities: 11.50	Leadership	2.44
	Integrity	2.04
	Communication	1.75
	Initiative	1.46
	Common Sense	1.44
	Management	1.27
	Dedication	1.09
Technical Competence: 10.93	System/Item/Program Mgt.	2.56
	Maintenance	1.70
	Engineering	1.50
	Procurement	1.42
	Logistics Plans	1.35
	Supply	1.32
	Transportation	1.03

PCE: 8.53

Category	Element	Weight
Professional Skills: 8.53	Job Knowledge	2.11
	Problem Solving	1.69
	Resourcing	1.34
	Planning	1.30
	Analytical Techniques	1.06
	Thorough Staff Work	1.03

Geographic Mobility: 7.34

PME: 4.65

Category	Element	Weight
Professional Organizations: 4.01	Active Member	1.66
	Presenter/Moderator	1.61
	Conference Attendee	0.75

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The validation respondents were neutral on the importance of a masters degree. It was interesting to note that more than half the respondents possessed a masters degree. Their response therefore does not denigrate the value of a masters degree, but rather suggests they do not believe the degree should be a mandatory requirement or a disqualifying factor for promotion or selection to senior civilian logistician status.

The GM-15 senior civilian logisticians accept all of the AFIT Civilian Model dimensions as valid and accept eight out of the ten categories as valid.

Research Question Five:

How well do grade GM-15 senior civilian logisticians meet the model criteria? Are there differences among them that can be explained by job series or other factors?

As a group, the GM-15 logisticians did not meet the criteria of the AFIT Civilian Model very well. Their mean score was 67.3 out of 100 total points, with a standard deviation of 11.0. The respondent model scores ranged from a low score of 39.6 to a high score of 91.1.

More specifically, the GM-15 logisticians did not score very well in any of the three model dimensions. Their mean experience score was 29.3 out of 40. While eleven individuals received the top score of 40 points, the experience scores were low mainly due to the respondents' lack of

mobility. Only 44 percent of the respondents met the mobility criteria of two or more geographic moves.

The GM-15 logisticians did not score well in the professional attributes dimension. Their mean score was only 21.1 points out of a possible 35. However, the respondents were very well qualified in the technical competence category. All but 12 respondents achieved perfect technical competence scores. They did not score well in the professional involvement category. In fact, only 19.7 percent of the respondents were active members of professional logistics organizations. While they were not members, over half of the GM-15s had attended the conferences, seminars, and symposia sponsored by professional logistics organizations. The respondents' mean personal qualities and professional skills scores were also low, but those scores reflected the relative degree to which each individual possessed each quality and skill in relationship to the other respondents. An important finding was the fact that the relative quality and skill rankings assigned by the GM-15s were statistically similar to the ideal rankings assigned by the weighting experts. This means the GM-15s and weighting experts agree on the relative importance of the specific personal qualities and professional skills contained in the AFIT Civilian Model.

On average, the GM-15 logisticians were not well qualified in the education and training dimension. Their mean

score was 16.9 out of 25.2 points possible. However, 26 individuals received top scores in this dimension. Approximately 91 percent of the respondents possessed a bachelors degree and 52 percent possessed a masters degree. Almost 72 percent had completed some PCE, but only 39.4 percent had completed a PME course at the Intermediate Service School level or higher.

Three factors were examined to see if they accounted for any of the differences in individual model scores: job series, specialist/generalist status, and mobility. There was no statistical difference in the mean model or dimension scores of individuals grouped by job series. The respondents were also classified as generalists or specialists based on their answer to a survey question. There was no statistical difference between the mean model and experience scores of the generalists and specialists. The mean model and experience scores were also tested for differences between those respondents who were classified as mobile and those who were not mobile. Again, no statistically significant differences were found.

Therefore, in general, the GM-15s did not fit the criteria of the AFIT Civilian Model very well. In addition, there appeared to be no statistical differences in mean model scores that could be explained by job series, specialist/generalist orientation, or mobility status.

<u>Research Question Six</u>:

What are the characteristics of grade GM-15 senior civilian logisticians who score very well against the model? What are the characteristics of those who score very poorly?

The top twenty GM-15s appeared to be well qualified based on their fit to the model. Their mean score was 82.5 with a range of 77.9 to 91.1 points. They came from a wide range of job series, as individuals from the 301, 345, 346, 801, 1601, 1910, and the 2000 and 2100 job series were all in the top twenty.

They scored well in the experience dimension with a mean score of 36.5 points out of the possible 40. All of the GM-15 logisticians in the top twenty had experience in wholesale logistics, 18 had acquisition logistics experience, 12 had combat logistics experience, and 12 had international logistics experience, and 7 had retail logistics experience. Only 10 of the top twenty respondents had an assignment in an operational command. Fifteen of the top twenty met the criteria for geographic mobility. All met the criteria for advanced positions. They all had staff experience at the division level or higher and possessed management and supervisory experience obtained primarily in logistics.

The top twenty individuals did not score as high in the professional attributes dimension. Their mean score was only 22.8 points out of the possible 35. They were

technically competent in several logistics functional areas. Nineteen respondents were competent in system, item, or program management and logistics plans. Eighteen were competent in supply, 16 in maintenance, 12 in procurement, 9 in transportation, and 9 in engineering. As a group, they were not active in professional logistics organizations. Only 5 were active members, only 8 had served as presenters, moderators, or panel leaders, but 14 had attended the conferences, seminars, or symposia sponsored by professional logistics organizations. The top twenty respondents did not score well in the personal qualities or professional skills categories; however, their mean scores, 6.0 and 4.6 points, were higher than the population mean.

The top twenty respondents were well qualified academically. Their mean score was 23.2 points out of 25.2 points possible. All individuals had completed a bachelors degree and some type of PCE. Sixteen of the top twenty respondents had completed a qualifying PME course, and sixteen individuals possessed a masters degree.

As expected, the bottom twenty respondents were not well qualified based on their fit to the model. Their mean score was 49.2 points with a range of 39.6 to 56.8. Like the top twenty respondents, they represented a wide variety of job series, including the 301, 345, 346, 801, 1101, 1601, and 2000 job series.

The bottom twenty respondents were not well qualified in the experience dimension. Their mean score was 18.2 out of 40 points possible. They possessed rather narrow backgrounds. Eighteen of them had experience in wholesale logistics, 10 had acquisition logistics experience, 5 had combat logistics experience, 4 had retail logistics experience, and 4 had international logistics experience. Only five of the bottom twenty respondents had user experience through an assignment in an operational command. They did not possess the requirements to receive credit for experience in advanced positions; their mean score was 5.3 out of 13.8 points. In addition, only five of these individuals met the mobility criteria.

The bottom twenty respondents did not score well in the professional attributes dimension. Their mean score was only 18.9 out of the maximum possible 35 points. Their strongest qualification was technical competence. Most met the requirements for a perfect technical competence score and their mean score for this category was 9.5 out of 10.9. Their personal qualities and professional skills scores were lower than the group average, with means of 4.8 and 4.3, respectively. They also had low levels of involvement in professional logistics organizations. Only one respondent was an active member, only three had attended conferences, seminars, or symposia sponsored by professional logistics

organizations, and only one had served as a moderator, presenter, or panel leader.

The bottom twenty logisticians were not well qualified academically. Their mean education and training score was only 12.2 out of 25.2 points. Sixteen had earned a bachelors degree and nine had earned a masters degree. Seven received credit for PCE and six received credit for PME.

In summary, the top twenty respondents possessed many of the qualifications of the ideal senior civilian logistician. The bottom twenty respondents, however, did not.

Discussion

The research objectives outlined in Chapter I provide an excellent framework for discussing the impact of the answers to the six research questions. The objectives of this research were first to develop a model of the ideal senior civilian logistician and second to determine how well the current senior civilian logisticians measured up to that model. The following discussion revolves around these objectives.

The model itself has proven to be a very general guide to the ideal requirements of the senior civilian logistician. The model is not job specific, nor does it depend on the traditional classifications of civilian logisticians. That is to say, the model does not discriminate between those who fill specialist versus generalist positions, those who are mobile versus non-mobile, or even those who are

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career logisticians versus non-career logisticians. There were no differences between mean model scores based on these groupings. Furthermore, one of the top twenty-five GM-15s was not even a career logistician, as evidenced by his not meeting the 70 percent logistics experience threshold for the advanced positions category. The greatest benefit of this model is derived from the model's generality. The model does not prescribe a lock-step career path for the aspiring senior civilian logistician.

Another interesting feature of the AFIT Civilian Model is its similarity to the AFIT Military Model. At their top two levels, the models are essentially identical. Even more importantly, the model dimension weightings vary in magnitude by only one percentage point. The differences between the models are minor. The military logistician is assumed to be mobile; the civilian logistician should also be mobile, so that requirement is specified in the model. The civilian logistician should possess certain professional skills; the same specification could be made for the military logistician. The results suggest that the differences between the ideal senior Air Force civilian and military logistician are minimal. The business of managing the military logistics system appears to be the same regardless of whether the logistician wears a "blue suit" or a business suit.

The answers to the research questions raise questions about the factors which may account for the generally low GM-15 model scores. During the second Delphi round, General Marquez claimed that civilian logistician career development was haphazard and left to chance prior to the initiation of LCCEP. The GM-15 logisticians surveyed are largely the product of that system; LCCEP came about too late to have a pronounced impact on their career development. Still, some of the respondents scored very well against the model and there must be some rationale for that occurrence.

During discussions with senior logisticians, some have explained that there are two types of civilian logisticians. One type of civilian logistician accepts the "civilians are different" orientation and follows a civilian, specialist-oriented career path. The other type accepts the "mirror the military" orientation and follows the military-oriented career path. Since it is important for military logisticians and officers to complete PME, obtain a masters degree, and gain a wide variety of experiences, the military-oriented civilian believes it is important for him or her to also do these things. Those civilians who scored well on the AFIT Civilian Model may be the military-oriented civilians. This seems especially plausible when one considers the strong similarities between the AFIT Military and Civilian Models.

Analysis of the top and bottom twenty civilian logisticians also provides insight into the possible reasons for differences in model scores. Technical competence was not a discriminator between the top and bottom scorers; both groups were exceedingly well qualified in this category. To be competitive for the top positions, a civilian logistician must be multidisciplined and therefore be technically competent in several logistics functional areas. As mentioned before, job series also was not a discriminator. The different job series had approximately equal representation within the top and bottom score groupings.

There are some definite differences in the qualifications of the top and bottom twenty GM-15 logisticians. They seem to revolve around the outward orientation of these individuals. The top twenty had a much higher percentage of members who had completed PME, PCE, and a masters degree, and had participated in the activities of professional logistics organizations. While these accomplishments are not heavily weighted in the model, they suggest that the individual who possesses them has a broadened view of logistics. These accomplishments also suggest a great deal of personal initiative on the part of the individual who possesses them. This is especially true for the current generation of GM-15 logisticians who did not have an established professional development program to guide them.

These insights provide valuable guidance for aspiring senior civilian logisticians. Those who have managed to become highly successful in logistics have developed a broad view of the entire spectrum of logistics. They have done those things which General Marquez, Mr. Mosemann, and the LCCEP have advocated. They have attempted to gain a broad understanding of logistics through experience, education, and association. The model outlines the ways they may obtain experience and education. They may also broaden themselves through association by performing duties beyond the confines of their specific job series, by working on projects with people in other job series, or by becoming involved in the activities of a professional logistics organization. In this sense, the model serves a synergistic function as it brings together the current wisdom on civilian logistician professional development in a coherent and prioritized format.

Contributions

Four potential contributions of this research were discussed in Chapter I. Each of the four products of this study -- the descriptive model, the weighted model, the empirical data about the current population of GM-15 senior civilian logisticians, and the comments of the GM-15 senior civilian logisticians themselves -- have specific contributions and uses. In the following section, these contributions are analyzed using the results of this research.

The primary output of this research effort, the AFIT Civilian Model, provides civilian logisticians with a senior logistician orientation for career development and, more importantly, professional development. The model contains four features which make it most useful to the senior civilian logistician. It represents the opinions of some of the best logistics minds available, it is general and not too specific, it does not favor any one type of individual, and it demonstrates that a logistician may take different career paths in his or her journey to the top of the Air Force civil service logistics hierarchy.

First, the model represents the consolidated thinking and professional opinions of some of the best minds in logistics. These individuals possess a wealth of experience, and yet they may not have ever communicated their beliefs about senior civilian logistician career development. Certainly they have never done this as a group with senior civilian logistician career development as their focus. These senior military and civilian logisticians were very interested in participating in this research; only one alternate Delphi expert had to be included because one of the prospective Delphi experts did not wish to participate in the survey. Furthermore, the experts spent considerable time making comments about the subjects addressed in the Delphi surveys which also reflected their strong interest in the subject of senior logistician career development. These

comments are presented in their entirety in Appendices B, D, and F.

The second feature of the AFIT Civilian Model is its generality. It is important that a career development model be general and not be too specific or restricting. As one of the SES Delphi experts recommended, "Let's not get too specific at the SES level. A well rounded person is what we need." Furthermore, such a model should not serve as a specific checklist of requirements. As one Lieutenant General Delphi expert wrote, "You cannot list, in cookbook fashion, attributes or skills that describe good people or successful people and then start filling in the matrix." The AFIT Civilian Model is very general in its descriptive form. It does not pinpoint the types of experience or management and staff positions a senior civilian logistician should have. It does not specify the educational courses civilian logisticians should take. Furthermore, it does not specify all the characteristics a senior civilian logistician should have. In the model's professional attributes dimension, only the most important characteristics are listed to give the civilian logistician a perspective on which ones are important.

The generality of the model allows it to be used by different types of individuals. It is flexible enough to be used by individuals in generalist and specialist oriented job series. In fact, those groups did equally well when

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they were compared to the model during the fourth phase of this research. As mentioned in the previous section, it is even applicable to the non-career civilian logistician.

The three preceding model features take into consideration the idea that there are several different career paths an individual may take to attain the grade of SES. Not everyone will follow the same path nor possess the same qualifications. As one academician wrote during the second round Delphi survey,

> Obviously, the brief content of the model as you present it leaves fair room for discussion, but that's good, I think, because it means that any later selection process would have leeway to work with. Obviously, not everyone can be developed like all others. There must be, and will be, variations from the standard. The selection process for advancement should be allowed that freedom of judgment and choice.

The model does not assume a standard career path that should be followed by all potential senior civilian logisticians.

In addition to the four contributions that arise from the model in its descriptive form, the quantitative model also possesses significant career development potential. Most importantly, it provides the civilian logistician with a sense of perspective. It clearly shows which qualities, characteristics, and background are vital and which are "nice to have." It emphasizes job performance and experience as the most important factors to be considered in career development. The AFIT Civilian Model's emphasis on job performance and experience is congruent with the new Air

Force emphasis on these same factors in the Officer Evaluation System.

The third contribution of this research is its presentation of empirical data on the population of GM-15 logisticians. The strengths and weaknesses of this group are outlined in the context of the respondents' fit to the model. The individuals in this group have been very successful in their careers. By looking at the strengths and weaknesses of the GM-15 logisticians, the senior Air Force leadership can see what characteristics and background have been rewarded by promotion to senior logistician status. This information about today's GM-15 logisticians may also help the senior Air Force leadership determine whether there are weaknesses in the civilian logistician career development process which should be remedied.

The final contribution of this research is the information it provides about the attitudes of today's GM-15 logisticians. The validation survey results and GM-15 respondent comments suggest the current senior logisticians do not accept the requirement for geographic mobility. Many of them have been successful without having to relocate. Although the senior Air Force leadership has said that it desires a mobile senior civilian work force, senior civilian logisticians are still opposed to the policy. Their perceptions of the goals and policies surrounding mobility do not appear to be the same as the goals and policies the senior

Air Force leadership is trying to communicate. AFIT
research on civilian logistician mobility attitudes and
history is currently in work. The results of Ms. Carol
Felici's work and this study could provide the senior Air
Force leadership with valuable information on civilian
logistician mobility attitudes. The attempts of Air Force
leaders to "sell" mobility have apparently not worked. This
research provides empirical feedback on that policy to the
senior Air Force leadership.

Recommendations

In an attempt to answer the six research questions,
this research has raised additional questions. Three recom-
mendations for future research and use of the AFIT Civilian
Model are suggested.

1. The AFIT Civilian Model should be refined through
another iteration of expert review. This iteration should
focus on developing a common understanding of some of the
terms used in the model. Many of the terms used in the
professional attributes dimension, such as technical compe-
tency and leadership, need to be defined with respect to
their use as requirements for the ideal senior civilian
logistician. This iteration should also focus on fine-
tuning the element weightings, especially in the profes-
sional attributes dimension. The use of conjoint analysis
or other similar techniques may prove useful to achieve this
objective. It is this researcher's gut feeling that

leadership should be weighted higher than a bachelors degree within the model. Perhaps the experts would revise the element weightings or suggest that some elements be reorganized within the model. For instance, some of the qualities may encompass others and some qualities, such as communication, may be better classified as skills. Another round of expert review should enhance the usefulness of the weighted AFIT Civilian Model.

2. The LCCEP Policy Council should consider endorsing the descriptive AFIT Civilian Model as a valuable career guidance tool. The AFIT Civilian Model could then be published in a career development brochure for all LCCEP registrants. As an adjunct to the Master Development Plans, the AFIT Civilian Model would provide a broad perspective of civilian logistician professional development.

3. Research should be conducted to assess the qualities, characteristics, and background of current GM-13 and GM-14 civilian logisticians and compare them to the AFIT Civilian Model. These individuals should have benefited from some of the LCCEP career development programs. An examination of their qualifications may help the LCCEP Policy Council determine whether those programs have had the desired effect on civilian logistician professional development.

Appendix A: Round One Delphi Survey

19 January 1988
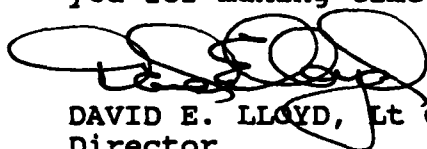
Lt Gen Charles C. McDonald, USAF
USAF/LE
Pentagon
Washington DC 20310

Dear General McDonald:

Thank you for agreeing to participate in this AFIT Delphi
survey. The purpose of this research is to determine the
desirable qualities, characteristics, and backgrounds for our
senior Air Force civilian logisticians. You were selected to
participate in this important research because your experience
and insight qualify you as a senior military logistics "expert".
Your opinions and comments will be combined with those of other
"experts" to develop a descriptive model of the senior civilian
logistician.

The attached Delphi survey solicits your personal opinions
in a number of areas. To assist in this research, please
complete the survey and return it in the enclosed envelope within
10 days. As soon as all the responses are compiled, a second
Delphi survey will be mailed to you.

Your comments, suggestions, and ideas regarding this
research and the model are welcome and encouraged. If you have
any questions about this survey please call me at (513) 255-5023
(AV 785-5023) or Captain Ralinda Gregor at (513) 293-3189. Thank
you for making time to share your expertise.

DAVID E. LLOYD, Lt Col, USAF   2 Atch
Director   1. Delphi Survey
Graduate Logistics Management Program 2. Return Envelope
School of Systems and Logistics

Round One Delphi Survey

1. Survey Objectives:

a. To obtain expert opinion on what the qualities, experience, and education/training of the professional senior Air Force civilian logistician should be.

b. To determine what steps the Air Force could take to develop the desired civilian logistician.

2. Definitions

a. Military Logistics: A fully integrated system of processes which must be used to support the military operations of an organization, including combat. Although recent logistics doctrine changes suggest this includes all areas which support combat, such as hospital, food, and personnel services, this survey is directed toward the traditional disciplines and functional areas listed below.

b. Logistics Disciplines: Major groups of related activities, each of which involves many of the logistics functional areas. The main disciplines are:

Retail	Wholesale
Acquisition	Combat
International	

c. Logistics Functional Areas: The different types of actions and expertise needed to carry out the full spectrum of military logistics and its disciplines. For the purposes of this study the following areas are included:

Engineering	Procurement
Logistics Planning	Supply
Maintenance	Transportation
System, Item, or Program Management	

d. Logistician: An individual whose profession or specialty is performing one or more of the prime management functions (planning, organizing, coordinating, directing, and controlling) in a logistics discipline or functional area or who is responsible for ensuring logistics processes are completed in support of an organization's activities.

e. Senior Logisticians: Civilians at GM-15 or Senior Executive Service (SES) level and officers in the rank of colonel or higher, serving as logisticians.

f. Qualities: Traits or properties that describe an individual and help distinguish him or her from other individuals.

3. General Comments:

a. The subject areas covered in this questionnaire are not meant to be complete or exhaustive. Instead, the coverage is designed to stimulate your thinking.

b. Your participation and honest opinions are key to the success of this research project. There are no right or wrong answers. Therefore, all your ideas and brainstorming comments should be included. In later rounds of questioning, these ideas may spark additional comments by other participants.

c. At least two rounds of questioning will be needed to arrive at a group consensus. Each round should not take more than one hour of your time. After each round, all participants' responses will be compiled and given back to you at the start of the next round. You will be provided an executive summary of this research after it is completed.

d. The questionnaire is divided into nine topic areas. Many of the questions call for an answer along a scale. Others require ranking by relative importance. Some request a term be supplied. Still others solicit your personal comments.

e. The number in the upper right-hand corner of the questionnaire is for survey control purposes only. Please be assured that complete anonymity will be enforced.

4. Specific Instructions:

a. When a question calls for an answer along a scale,please circle the number which most accurately reflects your judgment on that question or statement.

b. When a question requires a ranking response, please rank order the alternatives, using '1' for the most important item.

c. Please write the rationale for your answers, especially for those areas where you feel strongly. Add any illustrations, examples, or experiences you have had that will help the other participants understand your response. Feel free to continue your comments on the back of the survey sheets. Please number your comments so they correspond to the question you are answering.

d. Any ideas or recommendations you have for improving civilian logistician development should also be included with your responses.

Your ideas will be shared with others who care about senior civilian logistician development.

    e. The last page of this survey is for any additional comments you feel are pertinent to this study.

    f. If you have any questions about this survey please call Capt Ralinda Gregor at (513)293-3189 or LtCol David Lloyd at (513) 255-5023 (AV 785-5023).

THANK YOU FOR PARTICIPATING IN THIS SURVEY.

TOPIC 1: BASIC CHARACTERISTICS

    a. Prior research has suggested a descriptive model of the characteristics of the senior civilian logistician as shown below. The model is composed of three major dimensions. Each dimension is composed of two or three categories.

Dimensions	Categories
	Assignments in Logistics
Experience	
	Advanced Positions (supervisory, staff)
	Advanced Degree
Education and Training	Professional Continuing Education (PCE)
	Professional Military Education (PME)
	Professional Involvement (SOLE, NCMA)
Professional Attributes	Technical Competence
	Personal Qualities and Characteristics

This model provides a basic structure for outlining the characteristics of a senior civilian.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

    b. Without getting into more specific subelements under the categories, would you add or change anything in this model?

_____

_____

_____

_____

_____

TOPIC 2: EXPERIENCE

a. Prior research suggests senior civilian logisticians should have had management and supervisory experience in several positions.

(1) What is the minimum number of personnel senior civilian logisticians should have supervised? _____

(2) What is the minimum dollar amount of resources senior civilian logisticians should have managed? _____

(3) What is the minimum number of management and supervisory positions a senior civilian should have held? _____

b. Senior civilian logisticians should have had staff experience.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

c. Ideally, what is the minimum acceptable level of staff experience for a senior civilian logistician?

_____ Branch - Center (ALC, AFALC, ILC, etc.) or Product Division (PD)

_____ Division - Center or PD

_____ Directorate - Center or PD

_____ Headquarters - AFLC or AFSC

_____ Headquarters - USAF or SECAF

_____ Other (please specify)_____

d. __Realistically__, what is the minimum acceptable level of staff experience for a senior civilian logistician?

_____ Branch - Center (ALC, AFALC, ILC, etc.) or Product
   Division (PD)

_____ Division - Center or PD

_____ Directorate - Center or PD

_____ Headquarters - AFLC or AFSC

_____ Headquarters - USAF or SECAF

_____ Other (please specify)_____

d. What proportion of a senior civilian logistician's management and staff experience (GS/GM-13 and above) should have been in logistics jobs? (please fill in a percentage) _____

e. Civilian logisticians should be multidisciplined: that is, experienced in more than one logistics discipline. (see listing in question 2.g. below)

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

f. In how many logistics disciplines should senior civilian logisticians __ideally__ have experience? _____

g. In which disciplines should they have experience? (In Column A please check as many as necessary and in column B rank order your choices with '1' being the most necessary.)

Column A   Column B

_____ Retail   _____

_____ Acquisition   _____

_____ International   _____

_____ Wholesale   _____

_____ Combat   _____

_____ Other _____   _____
      (please specify)

h. In how many logistics disciplines could they <u>realistically</u> have experience? _____

i. <u>Ideally</u>, senior civilian logisticians should have prior military experience.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

j. The Air Force should have a plan to identify promising civilian logisticians at lower or middle levels and groom them for higher level responsibilities.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

k. The background of the ideal senior civilian logistician should include an assignment with an operational command to gain user or retail logistics experience.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

COMMENTS_____

_____

_____

_____

_____

_____

_____

TOPIC 3: MOBILITY

a. The mobility attitude and the mobility history of a logistician should be factors in the selection of senior civilian logisticians.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

b. Mobility history is a reflection of the person's breadth of experience.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

c. If a civilian logistician has not been geographically mobile (hasn't relocated) then functional mobility (movement between different logistics disciplines or functional areas) is an acceptable indicator of that individual's breadth of experience.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

d. How many geographic relocations should a civilian logistician (GS/GM-14 and below) make to be considered mobile? _____

e. How many different functional areas or logistics disciplines should a civilian logistician (GS/GM-14 and below) have experience in to be considered functionally mobile? _____:_

d. Senior civilian logisticians should be geographically mobile.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

COMMENTS _____

_____

_____

_____

_____

TOPIC 4: ACADEMIC EDUCATION

a. Prior research has indicated civilian logisticians aspiring to
senior positions should have a bachelors degree, even though there is
not a firm requirement for one. If you agree, please identify the best
field of study for this degree. (check only one)

_____ Business Administration

_____ Engineering

_____ Liberal Arts

_____ Logistics Management

_____ Sciences

_____ Management

_____ Other (please specify) _____

_____ Degree important but area of study is not

_____ I DISAGREE with the statement

b. By what grade level should a civilian logistician have a
bachelors degree? _____

c. Senior civilian logisticians should possess a masters degree.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

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d. If you agree, in which area of s udy should a civilian logistician pursue a masters degree? (check only one)

_____ Business Administration

_____ Engineering

_____ Liberal Arts

_____ Logistics Management

_____ Sciences

_____ Management

_____ Other (please specify) _____

_____ Degree important but area of study is not

_____ I DISAGREE with the statement

e. By what grade level should a civilian logistician have a masters degree? _____

f. Civilian logisticians should be encouraged to earn an MS degree at the Air Force Institute of Technology.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

COMMENTS_____

_____

_____

_____

_____

_____

_____

TOPIC 5: PROFESSIONAL CONTINUING EDUCATION (PCE)

    a. Professional Continuing Education is important to civilian logistician development.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

    b. What kinds of courses/topics should civilian logisticians be taking as part of their professional continuing education?

COMMENTS_____

TOPIC 6: PROFESSIONAL MILITARY EDUCATION (PME)

    a. PME is important to the professional development of a senior civilian logistician.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

    b. Civilian logisticians should attend PME _in residence_.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

c. Please rank order the following PME schools from highest (1) to lowest (5 or 6) to indicate how valuable these courses are to senior civilian logisticians. (Use '0' for 'none' as often as you think appropriate.)

_____ Squadron Officers School (SOS)

_____ Air Command and Staff College (ACSC)

_____ Defense Systems Management College (DSMC)

_____ Industrial College of the Armed Forces (ICAF)

_____ Air War College (AWC) (or Army or Navy)

_____ Other (please specify) _____

d. Please check the PME schools you have completed. If you attended in residence, please mark with an 'R'.

_____ Squadron Officers School (SOS)

_____ Air Command and Staff College (ACSC)

_____ Defense Systems Management College (DSMC)

_____ Industrial College of the Armed Forces (ICAF)

_____ Air War College (AWC) (or Army or Navy)

_____ Other (please specify) _____

COMMENTS_____

_____

_____

_____

_____

_____

_____

TOPIC 7: PROFESSIONAL INVOLVEMENT

a. What levels of involvement in professional organizations, such as SOLE or NCMA, are important for civilian logisticians? (please check all that apply)

_____ none

_____ member

_____ active member (attends most meetings and functions)

_____ officer

_____ other (please specify) _____

b. What levels of participation in professional logistics symposia, seminars, and conferences are important for civilian logisticians? (please check all that apply)

_____ none

_____ attendance

_____ presenter

_____ panel leader, moderator

_____ other (please specify) _____

c. Professional involvement is more important for the professional development and broadening of civilian logisticians than for their military counterparts.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

COMMENTS_____

_____

_____

_____

_____

TOPIC 8: TECHNICAL COMPETENCE

a. Civilian logisticians aspiring to senior positions should have
technical experience in more than one logistics functional area. (see
listing in question 8.c. below)

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

b. In how many logistics functional areas should they ideally have

experience? _____

c. In which logistics functional areas should they have experi-
ence? (In Column A please check as many as necessary and in Column B
rank order your choices with '1' being the most necessary.)

Column A   Column B

_____   Engineering   _____

_____   Logistics Planning   _____

_____   Maintenance   _____

_____   Procurement   _____

_____ Supply   _____

_____ System, Item, or Program Management   _____

_____ Transportation   _____

d. In how many functional areas could potential senior civilian
logisticians realistically be competent? _____

e. Senior civilian logisticians should be technically competent in
more functional areas than their military counterparts.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

f. Please explain your answer to 8.e. _____

_____

_____

g. Senior civilian logisticians should possess more technical competence in their current functional area (current job) than their military counterparts.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

h. Please explain your answer to 8.g. _____

_____

_____

i. Civilian logisticians should demonstrate competence in military logistics through testing or certification.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

j. If you agree, describe how this demonstration should be structured.

_____

_____

_____

COMMENTS _____

_____

_____

_____

_____

_____

_____

_____

TOPIC 9: QUALITIES AND CHARACTERISTICS

a. Prior research has suggested there may be identifiable quali-
ties which distinguish successful civilian logisticians from unsuccess-
ful ones. Using the following list, please rank order (from 1 to 5) the
five MOST IMPORTANT qualities for senior civilian logisticians. You may
draw a line through any quality to indicate you recommend removal from
the list or you may insert any other qualities you consider important.

_____ Management	_____ Integrity
_____ Leadership	_____ Dedication
_____ Communication	_____ Initiative
_____ Multidisciplined	_____ Mobility
_____ Vision/Forward looking	_____ Common sense
_____ Other (please specify) _____	
_____ Other (please specify) _____	

b. Research has also suggested other distinguishing characteris-
tics which are appropriately considered learned skills. Using the fol-
lowing list, please rank order (from 1 to 5) the five MOST IMPORTANT
skill characteristics for senior civilian logisticians. You may draw a
line through any skill to indicate you recommend removal from the list
or you may insert any other skills you consider important.

_____ Job knowledge	_____ Computer literacy
_____ Planning ability	_____ Scheduling ability
_____ Analytical techniques	_____ Grievance handling
_____ Thorough staff work	
_____ Federal budgeting familiarity	
_____ Problem solving/Systems viewpoint	
_____ Resourcing ability (programming, budgeting, allocating)	
_____ Other (please specify) _____	
_____ Other (please specify) _____	

COMMENTS _____

_____

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Is there anything else you would like to add?

Thank you for completing this questionnaire and sharing your opinions.
Please mail this survey today to:

    AFIT/LSM (Bldg 641)
    Wright-Patterson AFB, OH 45433-6583

A self addressed envelope is enclosed for your convenience.

Appendix B: Delphi Round One Comments

Topic 1: Basic Characteristics

Active Duty General
     Yes -- I would focus educational opportunities toward
specific job related requirements which benefit the
organization now and for the next logical position the
individual is likely to be assigned. Also, we should
emphasize problem solving techniques and logical thought
processes, not academic achievement.

Active Duty General
     Add a dimension called focus or commitment. Need to
know if the senior civilian is interested in bettering the
Air Force or tied to a geographical area. Narrow focus of
today's SESs is a result of lifelong focus on one area and
one set of priorities.

Active Duty General
     Absolutely not -- you've covered it.

Retired General
     I prefer to see the results prior to suggesting
changes.

Retired General
     Experience should specifically call out management
assignments. Professional attributes should spell out
integrity.

SES Civilian
     Would prefer that personal qualities and
characteristics be a separate dimension. Intelligence,
creativity, leadership, etc. are much too important to be a
sub-division under professional attributes. In fact, I
believe they are the most important characteristics for
success.

SES Civilian
     I would add that of career broadening assignments.

SES Civilian
     Yes, under experience -- add assignments outside
logistics; e.g. career broadening.

SES Civilian
     I feel that civic involvement is related to
professional attributes, at least in regards to managerial
competence and personal qualities and characteristics.

SES Civilian

I would add another category under professional attributes -- community involvement/support.

GM-15 Civilian

Yes -- assignments in other career fields.

GM-15 Civilian

While it might be considered a sub-element under experience or professional attributes, I believe an important characteristic of my career was the opportunity to visit worldwide activities to experience their problems, their realities.

GM-15 Civilian

I do not particularly see "personal qualities and characteristics" as a professional attribute, but rather as an entirely separate dimension, as a part of the "whole person."

GM-15 Civilian

If advanced degree refers to a post BA/BS degree in logistics management, I disagree that it is necessary.

GM-15 Civilian

I don't believe the typical GM-15/SES has an advanced degree, PCE, or PME, although I agree it would be desirable.

Academician

I don't disagree with the model and I really don't have anything major to add to it because I believe such a model should not be too specific or too detailed. It should be generally descriptive and not specifically prescriptive.

Nevertheless, I wish we could use some form of the model to stress the need for senior logisticians to have a solid background in military logistics history. It seems a terrible shame we have so many logistics people who know next to nothing about what happened to their predecessors and what mistakes, and good decisions, came about. But, I recognize my voice is a weak one in the wilderness and I expect nothing of the sort to occur.

Academician

Viewing the above, the one thing that seems to be missing (particularly with regard to the Senior Civilian Logistician position) is "Management Skills." Does he/she delegate responsibility, are communications established, etc. I would tend to separate "Personal Qualities" from "Managerial Skills."

Topic 2: Experience

General comments:

Active Duty General
    Senior civilians need experience at unit level so that
their management of wholesale activity or headquarters
policy will be aimed at bottom line -- combat capability.
Functional measures of merit are OK, but are not the bottom
line.

Active Duty General
    SES logisticians don't fit into the A.F. scheme of
operational command logistics -- [an assignment with an
operational command] serves no useful purpose.

Active Duty General
    Need both product division and directorate level
experience plus MAJCOM staff level hands-on management/
leadership background to be effective in directing and
controlling outcomes. Additionally, planning experience and
programming exposure in major activities is highly
desirable.
    The least capable senior logistician in my experience
is the one with no real understanding of user
needs/attitudes and orientation. They become comfortable
with systemic measures of effectiveness and efficiency --
not with customer satisfaction. Moreover, even with
operational experience, they must renew their feel for
operations on a fairly frequent basis. Ideally, this is
accomplished through field visits.

Active Duty General
    Believe assignment at MAJCOM level would provide
insight into input of wholesale logistics decisions.
Extensive experience at retail (MAJCOM) level not necessary.
Two year assignment should suffice. Candidate needs to see
how dependent system is on AFLC/ALC decisions.

Active Duty General
    Last one most important [assignment with operational
command]. AFLC senior civilians out of touch with field
needs and real reason for existence -- working hard on
warehouse inventory, PR backlog, execution, etc. -- need to
focus on readiness, slow improvement underway, but lots of
inertia.

Retired General
    The broad range and diversity of job assignments for
GM-15/SES make many (most?) of these questions difficult to
answer. An acquisition expert could go to SES in that
single discipline. An MM or MA deputy probably should have

experience in three or more, plus enough time with the customer to understand the problems of the combat units being supported. On the other hand, an SES assigned to supervise DPMLs would be much more capable with a broad background so as to understand the impact [of poor design, test, R&D, etc.] on R&M and availability, and he could be considered "an acquisition expert"!

Retired General
Senior civilian logisticians should have some hands-on experience within the support structure of a combat/ operating command to include base level support (maintenance and supply), mid-level (wing or division staff) and at major command level (planning, new weapon system deployment and support concepts, budgeting, and crisis management).

Retired General
There is no substitute for hands-on experience at an overseas combat wing.

SES Civilian
The "user" experience will tend to modify the development and execution of priorities and sense of urgency as exercised at the senior level.

SES Civilian
Wholesale, retail and acquisition could be acquired without requiring geographic moves.

SES Civilian
The type of job is more relevant than the discipline.

SES Civilian
Ideally, experience in every facet of logistics would be preferable, but it is not mandatory or expected.

SES Civilian
Like the blue-suit A.F., we need to avoid the trap of careerism.

GM-15 Civilian
Question the terms "experience" and "disciplines." I have been GS/M 2130/2101 all my career but have learned about those [other] disciplines. Couldn't do my job without that knowledge. Don't necessarily feel that multi-functioned job experience was important.

GM-15 Civilian
This experience [in an operational command] is vital to provide perspective and understanding.

GM-15 Civilian
    The military component of senior logistician staffs
have operational command background. Significant levels of
disciplinary expertise with corporate continuity will not be
gained through a series of career interruptions.

GM-15 Civilian
    I couldn't find how you defined staff for this survey.
My answer is based on a definition that would include
planning, financial management, inspection/audit of
logistics functions, development of policies, procedures, or
operating instructions for logistic functions. It also
assumes a GS or GM rating at the 13 grade level and that the
scope of responsibility or impact extends beyond the
organization of assignment, i.e. staff work performed
impacts across function/program/or organization, at the
center or division, or across command lines.

Academician
    I place top priority on experience in combat logistics.
I fully recognize that experience cannot be acquired without
war except vicariously through a study of history. Some
approximations of combat logistics might be gained from
deployments and exercises (if the USAF were more realistic
about such things) but, at best, those events are rather
'sterile' since they don't have the actual life threatening
factors at play. Further, there isn't the supreme penalty
such as might be present for actual combat loss. Then, too,
very few of the civilian logisticians have the opportunity
to participate, in responsible positions, in such exercises.
We need history to make up for the gap and to provide at
least that vicarious experience.
    Further, I am firmly convinced there is a major and
significant set of differences between military logistics
and combat logistics. One is not the other. Yet, so many
of our people seem to think that in combat they would
function much the same way as they do in peacetime opera-
tions. That might be true in your 'wholesale' effort, but
it certainly won't be true in the field and/or the combat
area.

Academician
    The minimum level of staff experience seems biased to
me. Why did you only include AFLC, AFSC, and Air Staff?
What's wrong with staff level experience at Major Commands
other than those you address? Are you indicating senior
logisticians can only come from those three experience
bases? If so, I would strongly disagree with your thesis.
    A major problem with senior civilian logisticians today
is that most are, indeed, concentrated in AFLC or AFSC.
They often have myopic views of the world created by the
limited scope of their activities. They rarely know, or

understand, the hectic pace of an operational unit scraping together resources to get essential jobs done in short time to acquire optimal readiness. They have very few opportunities to be exposed to operational deployment, to actual combat or combat support, and the like. I certainly hope you aren't going to push for staff experience in those three command areas as the be-all, end-all of experience for senior civilian logisticians.

Academician
     I believe that "first hand" knowledge of "user" requirements is ESSENTIAL for a senior-level manager in logistics (the function that directly influences and supports the user).

Question 2a.:

SES Civilian
     No minimum.

SES Civilian
     You can tell by answer what I consider to be the relative value of this question. A companion question would be "what is the minimum number of children to make a good mother?"

GM-15 Civilian
     I don't believe the numbers required reflect a meaningful parameter. If the intent is to arrive at breadth and depth of experience, minimum dollars and minimum people don't help. Duration at each management level is important; selling a program through the PPBS is important whether it is $100 million or $10 million.

GM-15 Civilian
     Answers are desirable rather than absolute. There is too much variety in position responsibilities of senior civilians to set a single hard and fast rule.

GM-15 Civilian
     I don't believe this question is valid as a determinant.

GM-15 Civilian
     Responsibilities with direct impact on accomplishment of mission should be key ingredient.

GM-15 Civilian
     Academic -- as long as they managed a complete budget."

Academician
    Varies depending on whether we are addressing an R&D
operation or a field activity.

Question 2d:

GM-15 Civilian
    [Minimum level of staff experience] Depends on where
the individual was hired and on how mobile he/she has been.

GM-15 Civilian
    Civilians should not be a SES without at least one tour
at MAJCOM headquarters. This perspective is critical to
understanding the driving influences to acquisition.

Question 2j:

Active Duty General
    We did this when I was AFLC/CC.

Retired General
    We should identify the civilian "below-the-zoners" and
move them around as we do our military "below-the-zoner".

Academician
    Create opportunities. The cream will rise.

Topic 3: Mobility

Active Duty General
    [Relocation is] Not Applicable - job, not place.

Active Duty General
    Mobility applies primarily to the senior civilians that
are recruited and serve at the ALC level. They have a
tendency to become parochial regarding that ALC's way of
doing business. Mobility breaks that down and is the most
persuasive argument for "insisting" senior civilians be
mobile. They need to acquire different views of how the
business operates.

Active Duty General
    The background they possess can only be meaningful by
the prevention of stagnation through mobility.

Active Duty General
    Nothing replaces geographic movement, not as an end in
itself, but to create and to maintain the outlook of
responsibility to mission and not location. Too often,
those not mobile have primary allegiance to form/structure
(maintaining local status quo) and not to the end product --

making things better for the user.

Retired General
    Operating (combat), retail, wholesale, etc. are seldom co-located. Therefore, geographic mobility is essential to proper development of a senior logistician -- military or civilian.

Retired General
    He should go _where_ he is needed _when_ he is needed or go buy a farm! This is a terrible weakness that hurts AFLC across the board -- although better now than before. The "shadow government" of senior civilians frustrates mobility, often refuses to accept an outstanding SES brought in from outside, subverts his work, and tries to force promotion selection into narrow limits favoring on-site selectees. This eventually can result in one or two SES having all the others at the ALC "beholden to them!" Bad news. We made some progress when I was AFLC/CC and this has continued but _every time you relax_ it starts up again. Moving is a hardship but we are talking about highly paid people who have enormous responsibilities. Neither the military nor industry will tolerate typical AFLC civilian lack of mobility. "Move or retire" should be the word!

SES Civilian
    Mobility is not an end unto itself. At WPAFB one can gain every kind of experience. Let's not lose sight of the objectives.

SES Civilian
    A senior level logistician should be ready and able to accept corporate challenges wherever they may be or whatever they might entail functionally. This is the essence of "General Management."

SES Civilian
    Mobility must be a factor for GM-15 level selections. Immobile GM-15s will not be considered for SES positions. Thus immobile GM-15s will not be considered and block other mobile GM-14s from working at the GM-15 level. As long as mobility at SES level is important, we must use GM-15 positions to develop mobile candidates.

GM-15 Civilian
    [Relocation] depends on need -- if to fill a square I disagree; if to meet a need of the individual _and_ the logistics organization I agree.

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GM-15 Civilian
This is a difficult question. The problem is that by forcing mobility we may force the system to select a less capable person in a specific situation. The trade off may be perceived as acceptable (i.e. more flexibility vs. "best person") -- I doubt it however.

GM-15 Civilian
Not important.

GM-15 Civilian
Past moves are not an indicator of current mobility.
Mobility should be a specific willingness to satisfy a specific requirement. Movement for the sake of saying you're broadening yourself or demanding it to fill a position so you can say you're bringing in new blood is ludicrous and very expensive. If an individual has a specific deficiency that needs to be filled in order to satisfy an Air Force requirement he should consider moving. If an organization has a specific requirement that can only be satisfied by someone from a different location he should be recruited. Otherwise 'mobility' should not be a factor.
In addition, I believe very strongly that mobility for mobility's sake is wrong. In fact, we need to stress job stability, responsibility, and accountability. Gen Hansen must share this to some extent as he has recently directed that System Program Managers (military) need more stable, longer term assignments.

GM-15 Civilian
Career broadening and breadth of experience are important but so too are stability and development in a community. Community relations and corporate knowledge are valuable assets.

Academician
Mobility is merely one factor which might be used to denote expanded experience. Certainly, a physical/ geographic move does add some form of experience change. But, the number of such moves is relatively unimportant. What is important is functional experience in increasingly more responsible positions.
As a result, I can't say I agree that senior civilian logisticians should be geographically mobile. The whole experience base should be the determining factor, not whether it involved a physical move.

Academician
"Mobility", viewed in a "positive" sense, is a fundamental requirement in the field. Also, one must consider the stability of the individual in performing certain project functions -- A "Job Hopper" is not good;

however, one must be willing to move! Also, movement is
necessary if one is to acquire the desired experience.

Academician
    I am completely aware of the programs employed to
"career develop" civilians. These fail to recognize that
civilians (a great majority) are not mobile. If they were,
they would most likely be in uniform. This lead-in is
intended to challenge your assumption which lies behind the
question; i.e., to be as good as senior military
logisticians, civilian logisticians must experience the same
patterns of career development.
    I believe that to be an impossible goal for the
majority of civil servants. I believe instead that they
should be "career-broadened" within the functions of
logistics and within the limits of their command at the
location where they serve.
    The Air Force problem is that it gives duties to
civilians which require the experience of Colonels and
General Officers. Senior civilians, having deep experience
let us say, at an Air Logistics Center, will naturally
optimize their decisions for results which favor the Center
or wholesale logistics in general. They have no other
experience base. On the other hand, the military officer in
AFLC rarely has such in-depth wholesale experience. His or
hers is most often retail experience. Solution -- since
military personnel are mobile, they should get more
wholesale (Center or Product Division) experience and should
fill those senior positions.
    Again -- to make them effective they should be mobile.
The clear fact is that the majority are not.
    The question has to be: If we make senior civilian
logisticians look just like senior military logisticians,
what are we going to gain and what are we going to lose?

Academician
    A person at Wright-Patterson for instance could pick up
more diversified experience than could be gained through
several physical moves.

Topic 4: Academic Education

General comments:

Active Duty General
    Useful to have a degree, particularly in logistics-
related functions or as noted above in a comprehensive M.S.
program. The primary emphasis, however, is and must be, on
today's performance as a measure of tomorrow's capability
and as the principal determinant of promotion. Academic
preparation is important -- not critical.

Active Duty General

Professional development through short courses and experience is more important.

Active Duty General

[Bachelors degree is] Preferably a requirement for initial employment.

Retired General

No B.A. in "basketweaving" of course but pursuit of bachelors or masters degrees may be more important in what it indicates as to attitude than content. The best product is measured ability in problem solving. By the time SES is achieved he'll not be working out distribution patterns or complex modification stress potentials on airframes, he'll be supervising people that are. He needs enough technical knowledge so that they can't snow him but needs best to know human behavior. If an engineer, he will probably, after 20 years, not have been able to keep up with that part of the "hands-on" trade. He also needs to be able to write, and to brief to get the work of his technical experts funded, accepted, etc.!

SES Civilian

A business [bachelors] degree or engineering degree are also in the preferred category in my opinion.

Liberal arts and logistics management also in preferred area [for masters degree].

GM-15 Civilian

The cost to the A.F. is the same for an educated employee or an uneducated one. I elect the educated!

GM-15 Civilian

Master's degree would be 'nice to have' versus 'should have.'

Civilian logisticians should be encouraged to continue the learning/education process in the manner most effectively/efficiently suited to their specific development goals and requirements.

GM-15 Civilian

I'm not convinced that a specific area of study is that important. I can see value to those checked, also public administration. I think the key is exercising the brain in higher level studies.

Academician

I believe in education and I think an undergraduate degree, at minimum, should be a major factor in describing a senior civilian logistician. Officers are required to have

such a degree base. Civilians should not be different if they expect to rise in responsibility and influence.

I said that an undergraduate degree ought to be in "Logistics Management" but I recognize there are relatively few places where that might be obtained. So, I would encourage a second choice to be "Liberal Education" with a sound core of mathematics and science smoothed by the humanities. The biggest consistent problems in logistics are people related and we need people who understand people running things. Far too many of our military and civilian logistics people are trained and educated to be "doers" rather than managers and leaders. That strong concentration on "doing" is superb for the lower level people who must, in fact, perform specific acts to get things done in the logistics system. But, as a person progresses upward, into that hallowed class of "logisticians", there must be less "doing" and more "directing" and "delegating" and "controlling". The liberal education is better suited to that, I believe.

Academician
I believe that, at the undergraduate level, a basic education in "engineering" provides an excellent discipline, whether or not one desires to continue in an engineering field. It provides a good background. At the graduate level, a "business" background is desirable. If this can be acquired in Logistics Management, OK. If not, then the MBA approach may be more desirable.

Question 4f:

Active Duty General
Degree more important than place.

Active Duty General
Would be nice but not necessary. My experience shows senior civilians are in the people management business. Their technical credentials have long since been established and accepted. AFIT is not renowned for its "social" management curriculum. Would rather hire someone who is "trained" to motivate and lead people.

Retired General
Again, some should -- 1st to man the specific skills -- 2nd to develop the ability to think rationally, determine what is fact and what is assumption -- 3rd to keep AFIT up to date as they come in from the field and challenge what is taught. But AFIT has had the same shortcoming (now changed at some) as MIT, Cal Tech, etc. in that some of the best technical graduates cannot write, brief, debate, argue, convince, persuade -- they just write 'QED' and expect to 1) get the military commander to agree, 2) the OSD to approve,

3) the media to understand, 4) the Congress to fund. We are talking about very senior people, who must deal with a broad range of nontechnical problems.

SES Civilian
    [Highly agree] Just look at the graduates and what they are doing (and can do)!

SES Civilian
    The rigor of AFIT is a good measure of determination.

SES Civilian
    AFIT is not the answer for everyone -- I believe other master's programs must be considered depending upon the individual and Air Force needs.

SES Civilian
    Pursuit of a master's degree on one's own time ought to be encouraged. An M.S. degree from AFIT is valuable but is extremely expensive and gives no indication of self-development.

GM-15 Civilian
    Don't really understand the specific reference to AFIT -- the civilian should be encouraged to earn a master's somewhere -- not just AFIT."

GM-15 Civilian
    Logisticians should be encouraged to continue their higher education, but the institution should be of their choice.

GM-15 Civilian
    Very difficult to get the best people broke loose from the job long enough to get the degree.

Academician
    I know of no other program which comes close to the value of [AFIT] Grad Log.

Academician
    I think an AFIT master of science degree would be great for the civilian logistician if AFIT would alter its curriculum to provide a more general education, including logistics history, with less emphasis on mathematical processes and 'doing' things. I certainly do not agree that we need GM-15 computer programmers in logistics management jobs, for example. Yet, we seem to educate them to become such.

Topic 5: Professional Continuing Education (PCE)

Active Duty General

Some need it -- some don't. At the senior level, managers should not feel pressure to continue formal education. Some do because they feel a need to develop some particular skill. Believe it should be left at that.

Active Duty General

Things like ILS, management information systems, production planning and control, weapon systems management, warranties, computer skills, munitions, item and commodity management, etc. These are all oriented toward specific problems and activities which solve ongoing knowledge gaps. This should be the goal of _all_ PCE.

Retired General

Those pertaining to the PPBS, to the Congressional process of authorizing and appropriations, to how to deal with labor, contractors, EPA, public law, etc. They need enough updates on logistics trends to retain respect of those they supervise but beyond that should have SENIOR skills. A parallel, I trust young aviators respected me because I could still make a refuelling hookup, hit a target, and made all my own takeoffs and landings, and that helped me do my job, but that job required a great many other skills!

Retired General

The object is to keep up-to-date and learn to apply advances in technology, management and economics to the world that logisticians manage.

SES Civilian

Regular training is important to keep abreast of technical, managerial developments.

SES Civilian

Assume by professional you mean non-technical. Courses on human relations, management, team building, creative thinking -- these spell the difference between mediocrity and success.

SES Civilian

Topics related to changes in pertinent technology and information systems, and refresher and development topics related to managerial style.

GM-15 Civilian

Education should continue throughout a career with focus on interpersonal relations, communication, and self-awareness. Specific programs should also offer cross

discipline education (i.e. contract law for acquisition managers and wholesale logisticians).

Academician

The PCE courses I would propose generally do not now exist. They should. I have listed a few of them. The specific job-related PCE courses are fine and very valuable for the 'doers' but those striving to be the senior logisticians have to learn material other than about their current jobs.

Academician

Any "professional" in today's environment needs continual upgrading in different skills. The topics may vary depending on functional responsibilities. I see too many "retired" individuals still on the job!

Topic 6: Professional Military Education (PME)

Active Duty General

PME, as currently structured, has benefit to senior loggies because they expose students to the broad spectrum of Air Force people and activities. As such, attendance is useful but not essential.

Retired General

For the SES who is going to the very top, this is very important. He needs not only to know the real problems the military has but those they PERCEIVE they have -- their prejudices, fears, traditions, what makes them tick (or not tick). He also needs to learn about the THREAT, and that real people die when combat support is not forthcoming. He also contributes a great deal, introducing to the often naive operators (as I once was) the real world of what they need to do to help combat support, from requirements to how to treat and care for equipment!

SES Civilian

PME is not essential, but it rounds out a logistician, and provides valuable insight into operational roles and military thinking. I feel I would be a better manager if I had completed ACSC or AWC.

SES Civilian

Individuals should participate in base seminar programs and off-duty education programs.

GM-15 Civilian

As important to civilians as military.

GM-15 Civilian

I don't believe PME is more important than continuing education. The Senior Executive Fellows at Harvard is a superior education for a civilian (potential or current SES).

GM-15 Civilian

ICAF would be useful but not essential, same for remainder with declining degree of usefulness.

Academician

I believe civilians can gain much from PME and they should be encouraged to participate in residence or seminar or correspondence. But, I don't agree that PME should be mandatory for them. I doubt the PME schools could handle the quantity of civilians necessary to meet mandatory criteria.

Nevertheless, participation on a volunteer basis would be very valuable and helpful. For one thing, it would give some appreciation for the military side of our affairs. For another, it would build on the military experience of the civilian. I do think military experience ought to be a major factor in determining who might become a senior civilian logistician. But, I also know that thought is not commonly shared - particularly by the civilian employees.

Academician

I am not qualified to answer "c" and "d" (in fact my response to "d" is "0"). However, if I were a senior civilian logistician in the services, I would want to acquire some PME in order to appropriately understand the many interfaces that exist in the logistics field.

Topic 7: Professional Involvement

Active Duty General

At the <u>senior</u> level -- items 7a and b should have been completed before becoming a senior manager. Active involvement should have been part of the training. Senior managers should resort to advisory roles. They have plenty to do in their senior positions. Qualification training is over!

Active Duty General

Good, because it becomes an avenue to exposure to the entire logistics field. Senior logisticians must have an appreciation, and to be highly effective a complete understanding, of supply, transportation, maintenance, fuels, munitions, commodities, FMS, logistics processes and new prospects in order to meet senior management responsibilities.

Active Duty General
    Professional involvement should focus on primary job
performance, not "academia."

Retired General
    Again, depends. Some will find it _extremely_ helpful to
be known as a "recognized expert", say in quality, software,
maintenance, etc. That will open doors, get funding, add
credibility to what they do to accomplish their mission.
For most that will 1) take up too much time, 2) not be
necessary. _Attendance_ will help them keep up to date, show
their support to subordinates, etc. Doubt if _any_ SES would
have time to be an officer, other than a figurehead, and
still do his job.

SES Civilian
    Professional involvement is equally important for
military and civilian logisticians.

SES Civilian
    There should be no distinction between military/
civilian professional involvement. Senior logisticians
should be as interchangeable as possible.

GM-15 Civilian
    It's equally important to both.

GM-15 Civilian
    Dislike any thought of difference.

GM-15 Civilian
    Seems to depend on the senior managements' interest.

GM-15 Civilian
    I see no significant difference [between military and
civilians].

Academician
    I firmly believe active involvement in professional
associations is essential for the senior logistician. That
involvement should begin at the GS-5 level and continue
throughout the career. Belonging to, and participating in,
several professional associations should be expected
(demanded?) of those who aim to be classed 'logistician'.
    However, I see no difference between the military and
civilian side of the house in this regard. I do not think
it more important for the civilian to be professionally
involved. Why should we say that is true? Is there some
magic provided by the uniform that makes professional
development less important? I do not believe that to be
true.

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Academician
    It is important for BOTH civilian logisticians and for
their military counterparts.

Topic 8: Technical Competence

General comments:

Retired General
    I feel about SES as I do about Colonels and Chief
Master Sergeants. They should be prepared to _supervise_ any
function. Where technically weak they should be good at
assembling the right people to do the job and setting goals
etc. for them, checking progress against schedule.

SES Civilian
    No function is any more important than any other.

GM-15 Civilian
    If these questions mean actually requiring multi-
functional work experience, I don't feel that is necessary.
What is beneficial is exposure to other functions.
Understanding functional interfaces can only result from
knowledge of other functional areas. While I have
transportation experience, I believe I could handle jobs in
other functional areas. Exposure to others areas is the
key.

Academician
    In most areas one not only needs to be a good manager,
but should be technically competent in certain fields. The
level of technical competence must be oriented to concepts,
new technologies, computer applications, etc., versus the
abilities to complete Exhibits --- of MIL STD ---.

Academician
    If I were the Supreme Grand Wizard, I would tell all
budding 'logisticians' they _must_ obtain basic knowledge in
all 7 of the areas you list. I would tell them they might
obtain this knowledge through on-job experience or through
PCE courses or through correspondence courses. Regardless,
they would have to prove to me they had acquired the
knowledge. For this reason, I would support a career-long
examination program as a means of measuring progress in the
acquisition of these knowledges.

Question 8e:

Active Duty General
　　Very few military have the chance to become competent
in wholesale and acquisition logistics.

Active Duty General
　　Military have less time available -- spend years in one
area at unit level -- as they should.

Active Duty General
　　Military managers bring field experience. We look to
our civilian managers to provide technical knowledge.
Military members may not be technically competent in any
area.

Active Duty General
　　[Agree] In jobs longer.

Active Duty General
　　[Agree] Because they spend their entire (for the most
part) careers in the logistics functions and because we pay
them for continuity as well as competence.

Retired General
　　As a civilian - with their inherent stability - they
will be able to move functionally across more areas than
their geographically mobile military counterparts.

Retired General
　　A senior logistician (civilian or military) should have
the same qualifications, as the Air Force will interchange
their positions and assignments as the situation dictates.

Retired General
　　The whole subject is so broad -- the MM's civilian
deputy may be needed technically or instead need to work the
civil service system to get, move, fire, reward people!

Retired General
　　[Agree] Because in most cases they are the management
continuity.

SES Civilian
　　Many competent military come from operational
environment and do not have sufficient time to gain
experience in more than one functional area.

SES Civilian
　　Military will eventually leave the logistics field and
proceed on to more purely management/leadership role thus
leaving civilians behind to do the more technical tasks.

SES Civilian

I feel that senior level personnel should have relatively equal levels of technical competence.

SES Civilian

Capabilities should be balanced.

SES Civilian

The civilian must make technical recommendations to military leadership.

SES Civilian

See no difference between civilian and military counterparts.

SES Civilian

Military are often stove-piped and do not know (or recognize) the interfaces.

SES Civilian

Civilians may be more competent in more areas but only because the military system may inhibit movement more than civilian system.

GM-15 Civilian

Key word is 'technically'. This implies extensive detail experience/education in specific areas. Since the civilian tenure in AFLC is longer than the military counterpart, the civilian should be more technically competent.

GM-15 Civilian

Depends on the job and the level -- the more senior the job -- the less technical the work.

GM-15 Civilian

Competent leadership in logistics requires people competent in its disciplines, be they civilian or military.

GM-15 Civilian

I would expect the civilian to have a more varied technical background because of the system we have, but I see no reason why that has to be or should be so.

GM-15 Civilian

Again, stability and expertise for the civilian.

GM-15 Civilian

The longevity of civilians at a base or assignment should give us more experience than most military who change jobs more often.

Academician

The military counterpart should be able to mold the civilian to higher competence.

Academician

I see no reason to require civilians to be technically competent in more logistics areas than their military counterparts. I would encourage combined programs in which military and civilian personnel would acquire knowledge/experience cooperatively and jointly.

Academician

Military personnel generally rotate while civilian logisticians provide the "stable" leadership required. The longer-term technical guidance is required for organizational success.

Academician

The senior military logistician depends upon the civilian's in-depth technical knowledge of functional areas for guidance in decision-making.

Question 8g:

Active Duty General

That's what they're paid for. They've trained in a limited area all of their careers.

Active Duty General

Military should develop thorough functional expertise at company grade levels.

Active Duty General

[Agree] Continuity is value added.

Active Duty General

Because we don't have enough blue suit technical people to go around. Ideally, we need blue suiters with absolute technical competence. We usually do not give them time to develop such long-term experience.

Retired General

Neither military or civilian will ever have the necessary technical competence to do the detail work say on confirming whether or not to ground an aircraft even though it will be their decision. They need to be able to judge the technical competence of others!

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Retired General
The military are usually the senior individual and should know as much as anyone else charged with management responsibilities.

Retired General
[Agree] They are the STABILITY and technical core!

SES Civilian
No difference.

SES Civilian
With the requirement for mobility in senior positions the distinction between military/civilian is harder to make.

SES Civilian
[Civilians] Provide continuity.

SES Civilian
Military can be more topographical since they will move every 2-3 years. Therefore, civilians will be left to do the "technical" work.

SES Civilian
Technical competence will never substitute for brightness -- or vice versa.

GM-15 Civilian
As a practical matter in AFLC the rotation of military generally results in their having less technical competence than their civilian counterparts.

GM-15 Civilian
Sometimes yes, sometimes no.

GM-15 Civilian
Length of time on job. Military mobility precludes development of many years experience in functional area.

GM-15 Civilian
Currently this statement tends to be correct because of the stability in some areas, however it should not necessarily be the case.

Academician
Given that most of the senior civilian logisticians will be in a major command headquarters, or the Air Staff, or high in a product division or ALC, I would agree they should be more technically competent in their current positions than their military counterparts. They, the civvies, form the base for continuity in these organizations. They remain while the military move on.

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They, by virtue of having longer time on the job, should be
in the position and role of educators of their military
counterparts where such education is required. I recognize
that the military are often placed in controlling roles,
over the civilians, but still the civilians can serve as
teaching persons and they should.

Academician
    This is the true value presented by senior civilian
logisticians. Not management, not leadership, but technical
expertise.

Academician
    The civilian should lend stability, the military --
innovation.

Academician
    Depending on the specific situation, this may or may
not occur.

Question 8i:

Active Duty General
    Haven't really considered it. Needs to be studied. Do
not think civilian managers will think much of the idea.
Not sure I like the idea of testing. Testing is not a good
indicator of senior civilian managerial/leadership
competence.

Active Duty General
    Job performance -- realistically evaluated -- is best
test.

Active Duty General
    Why? How? I doubt we could write such an exam. We have
enough trouble with blue suit certification and we don't do
it for senior managers. Exception: depot level maintenance
(wage grade) should be trained and certified in all critical
tasks. We are now doing so and should continue.

Active Duty General
    Set criteria and standards, then let people apply.

Retired General
    Agree at the lower levels, you can test them. Disagree
at the SES level -- it is like having a general shoot
gunnery, even if he's good at it, it does not show how he
can perform as a general officer!

Retired General
    Performance, exercise, and demonstration testing and
written examinations at career milestones should be the

basis for certification. This should apply to both military and civilian logisticians.

Retired General
The way we - the bureaucracy - would administer such a system would insure its ineffectiveness.

SES Civilian
Too much fragmentation to permit certification.

SES Civilian
There should be a certification system that has both testing and demonstration required.

SES Civilian
Not sure what "military logistics" is -- you didn't define it. I would favor certifying logisticians - perhaps by SOLE.

SES Civilian
Competency measurement in any profession is at best a hit/miss affair -- the more important characteristic to be observed and "measured" is the effectiveness of a person. To be competent by knowledge of a certain set of facts is not a meaningful measure if the individual cannot effectively use that knowledge.

GM-15 Civilian
Don't think it's practical. Need to develop POCs throughout community to identify candidates, to guide them, to identify weaknesses and correct. I believe ALCOA Aluminum has such a program and it makes a lot of sense.

GM-15 Civilian
Competency tests for certain grades could be developed.

GM-15 Civilian
Appraisal system sufficient.

GM-15 Civilian
Competence or lack of it is demonstrated every day.

GM-15 Civilian
I believe a series of tests comparable to bar exams for lawyers, CPA tests for accountants, engineering licensing exams for engineers, etc. should be developed for the "professional" logistician. A special job series should be created for the "professional" distinct from the supply, maintenance, inventory manager, etc. and the SES positions reserved for those who attain professional status. This program should be set up with full implementation about ten years in the future. No retroactive requirements and

sufficient lead time for today's trainees and journeymen to prepare for future SES requirements and the intervening grade levels.

Academician
   Through a combination of OJT and certification testing.

Academician
   As I earlier mentioned, I would support a career-long examination program for the budding 'logistician'. I would suggest it could be in the form of two efforts: One would be written essay type examinations graded by a core of designated experts while the second would be occasional interview sessions with a panel of such experts. Thus, the oral expressions in panel interview could balance the written and expand on one's knowledge. I haven't taken the time to develop that idea thoroughly, but I would encourage it. Records would be maintained to reflect the examinations/interviews accomplished and to reflect the individual's relative knowledge as displayed in these efforts. These records would be prime items in promotion selection and job assignments.

Academician
   Testing examines book knowledge. Professional engineers, doctors, lawyers, and others get their certificates before they can practice. Technical competence comes from practice, also known as experience. You cannot test experience.

Topic 9: Qualities and Characteristics

Active Duty General
   [Mobility] Not a quality.

Active Duty General
   These are useful, but not conclusive. You cannot list, in cookbook fashion, attributes or skills that describe good people or successful people and then start filling in the matrix. Nearly all successful senior logisticians I know are missing some desirable traits, just as is probably the case in other career fields. On the other hand, we need to encourage our people to work on shortfalls.

Active Duty General
   A good leader will have all of these qualities.

Retired General
   These [integrity and dedication] are part of this [leadership].

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Retired General

[Dedication and initiative] Visible in any "leader."
[Communication] Is a function of leadership. [Mobility] As
an SES he's mobile or out! Dependability -- when something
is expected it happens or plenty of reasons given as to why
not.

Working with people -- just one facet -- also reward,
punishment, promotion, moving, labor, HHQ, assignments,
training, etc. Determining priorities. Analysis of others'
work -- facts vs. assumptions; what bears on he problem,
what does not; is the problem as stated; are the conclusions
correct; do the recommendations follow and are they possible
to accomplish with time, resources, etc. Stated this way
you have the picture of an expert at micromanagement, but
this is very important -- is coordination complete, are both
sides stated, etc.

SES Civilian

[Integrity] Self-evident quality for all A.F.
employees. Qualities that I feel are necessary ingredients
in senior level personnel are open-mindedness, flexibility,
and determination.

GM-15 Civilian

The rank of these [qualities] would change with the
organizational level.
Savvy [added to list].

Academician

To me, Federal Budgeting, Scheduling, and Resourcing
are all subsets of Planning.
Computer literacy is extremely important. I regard it,
however, as a tool which, once learned, should be no more
important than knowing how to use a telephone. Tools are
tools; nothing more.

Academician

Certain of the personal characteristics imply others.

Miscellaneous Comments

Active Duty General

The system works. My experience with senior civilians
have all been positive except for senior civilians who have
made their careers in the Pentagon. For some reason, they
do not possess or cannot demonstrate reasonable deductive
skills.

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GM-15 Civilian

My responses reflect graduate level education as desirable rather than required. At the same time I propose a professional certification and testing program for a "professional logistician." This may appear inconsistent but I believe the knowledge necessary to pass the test/certification process should be obtainable through combinations of experience and education, not solely education.

DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY
AIR FORCE INSTITUTE OF TECHNOLOGY
WRIGHT-PATTERSON AIR FORCE BASE OH 45433-6583

Appendix C: <u>Round Two Delphi Survey</u>

24 February 1988
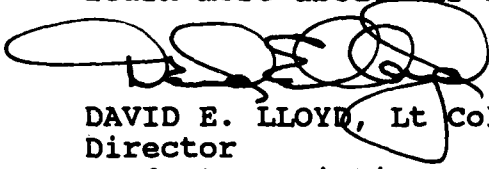
Gen Bryce Poe, II, USAF (Ret)
8424 Blakiston Lane
Alexandria, VA 22308

Dear General Poe:

Thank you for completing the first round of the AFIT Delphi Survey on Senior Civilian Logisticians. Your insightful comments were of great value to this research.

The second round Delphi questionnaire containing respondent feedback is attached. I am certain you will find the comments from our other experts interesting. Please read the comments and then answer the questions that follow. You will also note that the feedback provided for each question includes the mean ratings for all of the experts, plus your response on the last Delphi questionnaire. You may want to consider all the feedback in making your responses on this questionnaire.

Captain Gregor and I appreciate the time you are investing in this research. Please try to return your completed survey within one week, so the responses can be analyzed and a third round begun in March, if needed. Thank you again for helping us learn more about our senior civilian logisticians.

DAVID E. LLOYD, Lt Col, USAF
Director
Graduate Logistics Management Program
School of Systems and Logistics

2 Atch
1. Delphi Survey
2. Return Envelope

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1. Definitions

a. **Military Logistics:** A fully integrated system of processes which must be used to support the military operations of an organization, including combat. Although recent logistics doctrine changes suggest this includes all areas which support combat, such as hospital, food, and personnel services, this survey is directed toward the traditional disciplines and functional areas listed below.

b. **Logistics Disciplines:** Major groups of related activities, each of which involves many of the logistics functional areas. The main disciplines are:

Retail (base level)   Wholesale

Acquisition   Combat

International

c. **Logistics Functional Areas:** The different types of actions and expertise needed to carry out the full spectrum of military logistics and its disciplines. For the purposes of this study the following areas are included:

Engineering   Procurement

Logistics Planning   Supply

Maintenance   Transportation

System, Item, or Program Management

d. **Logistician:** An individual whose profession or specialty is performing one or more of the prime management functions (planning, organizing, coordinating, directing, and controlling) in a logistics discipline or functional area or who is responsible for ensuring logistics processes are completed in support of an organization's activities.

e. **Senior Logisticians:** Civilians at GM-15 or Senior Executive Service (SES) level and officers in the rank of colonel or higher, serving as logisticians.

f. **Qualities:** Traits or properties that describe an individual and help distinguish him or her from other individuals.

2. General Comments

a. During this round you will be given the mean or modal response for all experts and your last response for each question. You will also have representative comments listed at the beginning of each section and

after many questions. This feedback is designed to provide some 'food for thought' as you revisit several of these questions. You will have space to make comments regarding this feedback.

b. Some questions do not need further examination because there was strong expert agreement on the answer. For these questions you will be provided with the consensus response and the percentage agreement.

c. Your participation and honest opinions are key to the success of this research project. There are no right or wrong answers. Therefore, all your ideas and comments should be included.

d. The number in the upper right-hand corner of the questionnaire is for survey control purposes only. Please be assured that complete anonymity will be enforced.

3. Specific Instructions

a. Please consider the feedback provided with each question before you respond to the question.

b. When a question calls for an answer along a scale, please circle the number which most accurately reflects your judgment on that question or statement.

c. When a question requires a ranking response, please rank order the alternatives, using '1' for the most important item.

d. Please write the rationale for your answers, especially for those areas where you feel strongly. Add any illustrations, examples, or experiences you have had that will help the other participants understand your response. Please number your comments so they correspond to the question you are answering.

e. Any ideas or recommendations you have for improving civilian logistician development should also be included with your responses.

f. If you have any questions about this survey please call Capt Ralinda Gregor at (513) 293-3189 or LtCol David Lloyd at (513) 255-5023 (AV 785-5023).

THANK YOU FOR PARTICIPATING IN THIS SURVEY.

TOPIC 1: BASIC CHARACTERISTICS

    a. Prior research has suggested a descriptive model of the characteristics of the senior civilian logistician as shown below. The model is composed of three major dimensions. Each dimension is composed of two or three categories.

Dimensions	Categories
	Assignments in Logistics
Experience	
	Advanced Positions (supervisory, staff)
	Advanced Degree
Education and Training	Professional Continuing Education (PCE)
	Professional Military Education (PME)
	Professional Involvement (SOLE, NCMA)
Professional Attributes	Technical Competence
	Personal Qualities and Characteristics

This model provides a basic structure for outlining the characteristics of a senior civilian.

1a. Round 1 consensus: 93% agree or highly agree.

    b. Without getting into more specific subelements under the categories, would you add or change anything in this model?

Comments:

". . . the one thing that seems to be missing (particularly with regard to the Senior Civilian Logistician position) is 'Management Skills.' Does he/she delegate responsibility, are communications established, etc. I would tend to separate 'Personal Qualities' from 'Managerial Skills.'

"While it might be considered a sub-element under experience or professional attributes, I believe an important characteristic of my career was the opportunity to visit worldwide activities to experience their problems, their realities.

"Yes - Assignments in other career fields.'

"I do not particularly see 'personal qualities and characteristics' as a professional attribute, but rather as an entirely separate dimension, as a part of the 'whole person'."

"If advanced degree refers to a post BA/BS degree in logistics management, I disagree that it is necessary."

"I don't believe the typical GM-15/SES has an advanced degree, PCE, or PME, although I agree it would be desirable."

"I would add another category under professional attributes - community involvement/support."

"Add a dimension called focus or commitment - Need to know if the senior civilian is interested in bettering the Air Force or tied to a geographical area - Narrow focus of today's SESs is a result of lifelong focus on one area and one set of priorities."

". . . . I believe such a model should not be too specific or too detailed. It should be generally descriptive and not specifically prescriptive. Nevertheless, I wish we could use some form of the model to stress the need for senior logisticians to have a solid background in military logistics history. It seems a terrible shame we have so many logistics people who know next to nothing about what happened to their predecessors and what mistakes, and good decisions, came about. But, I recognize my voice is a weak one in the wilderness and I expect nothing of the sort to occur."

Your further comments on 1b.:

_____

_____

_____

_____

_____

TOPIC 2: EXPERIENCE

General comments:

"The broad range and diversity of job assignments for GM-15/SES make many (most?) of these questions difficult to answer. An acquisition expert could go to SES in that single discipline. An MM or MA deputy probably should have experience in 3 or more, plus enough time with the customer to understand the problems of the combat units being supported. On the other hand, an SES assigned to supervise DPMLs would be much more capable with a broad background so as to understand the impact [of poor

design, test, R&D, etc.] on R&M and availability . . . . , and he could be considered 'an acquisition expert'!'

'I place top priority on experience in combat logistics. I fully recognize that experience cannot be acquired without war except vicariously through a study of history. Some approximations of combat logistics might be gained from deployments and exercises (if the USAF were more realistic about such things) but, at best, those events are rather 'sterile' since they don't have the actual life threatening factors at play. Further, there isn't the supreme penalty such as might be present for actual combat loss. Then, too, very few of the civilian logisticians have the opportunity to participate, in responsible positions, in such exercises. We need history to make up for the gap and to provide at least that vicarious experience.
      Further, I am firmly convinced there is a major and significant set of differences between military logistics and combat logistics. One is not the other. Yet, so many of our people seem to think that in combat they would function much the same way as they do in peacetime operations. That might be true in your 'wholesale' effort, but it certainly won't be true in the field and/or the combat area.'

'Senior civilian logisticians should have some hands-on experience within the support structure of a combat/operating command to include base level support (maintenance and supply), mid-level (wing or division staff) and at major command level (planning, new weapon system deployment and support concepts, budgeting, and crisis management).'

'Senior civilians need experience at unit level so that their management of wholesale activity or headquarters policy will be aimed at bottom line - combat capability. Functional measures of merit are OK, but are not the bottom line.'

'The 'user' experience will tend to modify the development and execution of priorities and sense of urgency as exercised at the senior level.'

'There is no substitute for hands-on experience at an overseas combat wing.'

'Why did you only include AFLC, AFSC, and Air Staff? What's wrong with staff level experience at Major Commands other than those you address? Are you indicating senior logisticians can only come from those three experience bases? If so, I would strongly disagree with your thesis.
      A major problem with senior civilian logisticians today is that most are, indeed, concentrated in AFLC or AFSC. They often have myopic views of the world created by the limited scope of their activities. They rarely know, or understand, the hectic pace of an operational unit scraping together resources to get essential jobs done in short time to acquire optimal readiness. They have very few opportunities to be exposed to operational deployment, to actual combat or combat support, and the like. I certainly hope you aren't going to push for staff experience in those three command areas as the be-all, end-all of experience for senior civilian logisticians.'

". . . Even with operational experience, they must renew their feel for operations on a fairly frequent basis. Ideally, this is accomplished through field visits."

"Believe assignment at MAJCOM level would provide insight into input of wholesale logistics decisions. Extensive experience at retail (MAJCOM) level not necessary. Two year assignment should suffice. Candidate needs to see how dependent system is on AFLC/ALC decisions."

"The system works. My experience with senior civilians have all been positive except for senior civilians who have made their careers in the Pentagon. For some reason, they do not possess or cannot demonstrate reasonable deductive skills."

"The military component of senior logistician staffs have operational command background. Significant levels of disciplinary expertise with corporate continuity will not be gained through a series of career interruptions."

"SES logisticians don't fit into the A.F. scheme of operational command logistics - [an assignment with an operational command] serves no useful purpose."

"Need both product division and directorate level experience plus MAJCOM staff level hands-on management/leadership background to be effective in directing and controlling outcomes. Additionally, planning experience and programming exposure in major activities is highly desirable."

"Ideally, experience in every facet of logistics would be preferable, but it is not mandatory or expected."

"Responsibilities with direct impact on accomplishment of mission should be key ingredient."

"The type of job is more relevant than the discipline."

"Question the terms 'experience' and 'disciplines.' I have been GS/M 2130/2101 all my career but have learned about those [other] disciplines. Couldn't do my job without that knowledge. Don't necessarily feel that multi-functioned job experience was important."

"Like the blue-suit A.F., we need to avoid the trap of careerism."

"I couldn't find how you defined staff for this survey. My answer is based on a definition that would include planning, financial management, inspection/audit of logistics functions, development of policies, procedures, or operating instructions for logistic functions. It also assumes a GS or GM rating at the 13 grade level and that the scope of responsibility or impact extends beyond the organization of assignment, i.e. staff work performed impacts across function/program/or organization, at the center or division, or across command lines."

Your further comments: _____

_____

_____

_____

_____

    a. Prior research suggests senior civilian logisticians should have had management and supervisory experience in several positions.

Comments on 2a.:

"There is too much variety in position responsibilities of senior civilians to set a single hard and fast rule."

"No minimum."

"A companion question would be 'what is the minimum number of children to make a good mother?'"

". . . If the intent is to arrive at breadth and depth of experience, minimum dollars and minimum people don't help. Duration at each management level is important; selling a program through the PPBS is important whether it is $100 million or $10 million."

"Academic - as long as they managed a complete budget."

    (1) What is the minimum number of personnel senior civilian logisticians should have supervised?

Round 1 mean: 254   Your round 1 response:

    (2) What is the minimum dollar amount of resources senior civilian logisticians should have managed?

Round 1 mean: $350,000,000 Your round 1 response:

    (3) What is the minimum number of management and supervisory positions a senior civilian should have held?

Round 1 mean: 3.7   Your round 1 response:

    2a. Based on the wide range of answers to the above and significant disagreement on whether the questions are answerable, how would you determine if a senior civilian candidate has sufficient management and supervisory experience? What factors do you look for?

_____

----

    b. Senior civilian logisticians should have had staff experience.

Round 1 consensus: 97% agree or highly agree.

    c. <u>Ideally</u>, what is the minimum acceptable level of staff experience for a senior civilian logistician?

Round 1 mode: Headquarters (AFLC, AFSC, MAJCOM)

                       Your round 1 response:
                       ____ Branch
                       ____ Division
                       ____ Directorate
                       ____ Headquarters (AFLC, AFSC)
                       ____ Headquarters (USAF, SECAF)
                       ____ Other _____

Your new response (please check <u>one</u>):

    _____   Branch - Center (ALC, AFALC, ILC, etc.) or Product
             Division (PD)

    _____   Division - Center or PD

    _____   Directorate - Center or PD

    _____   Headquarters - MAJCOM

    _____   Headquarters - USAF or SECAF

    _____   Other (please specify)_____

    d. <u>Realistically</u>, what is the minimum acceptable level of staff experience for a senior civilian logistician?

Round 1 mode: division   Your round 1 response:
                       ____ Branch
                       ____ Division
                       ____ Directorate
                       ____ Headquarters (AFLC, AFSC)
                       ____ Headquarters (USAF, SECAF)
                       ____ Other _____

Your new response (please check one):

      _____ Branch - Center (ALC, AFALC, ILC, etc.) or Product
              Division (PD)

      _____ Division - Center or PD

      _____ Directorate - Center or PD

      _____ Headquarters - MAJCOM

      _____ Headquarters - USAF or SECAF

      _____ Other (please specify)_____

    e. What proportion of a senior civilian logistician's management and staff experience (GS/GM-13 and above) should have been in logistics jobs? (please fill in a percentage)

Round 1 mean: 70%   Your round 1 response:

Your new response: _____

    f. Civilian logisticians should be multidisciplined: that is, experienced in more than one logistics discipline. (see listing in question 2.h. below)

Round 1 consensus: 93% agree or highly agree.

    g. In how many logistics disciplines should senior civilian logisticians ideally have experience?

Round 1 mean: 3

    h. In which disciplines should they have experience?

Round 1 mode: 1 Wholesale
              2 Acquisition
              3 Retail

Your round 1 response:	Column A		Column B
	_____	Retail	_____
	_____	Acquisition	_____
	_____	International	_____
	_____	Wholesale	_____
	_____	Combat	_____
	_____	Other _____	_____

Your new response:
Check <u>three</u> only: Rank top three:

_____   Retail   _____

_____   Acquisition   _____

_____   International   _____

_____   Wholesale   _____

_____   Combat   _____

_____   Other _____   _____
                (please specify)

    i. In how many logistics disciplines could they <u>realistically</u> have experience?

Round 1 mean: 2.6   Your round 1 response:

Your new response (circle one):

    2 disciplines   3 disciplines   other _____

    j. <u>Ideally</u>, senior civilian logisticians should have prior military experience.

Round 1 mean: 3.2   Your round 1 response:

Your new response:

   1   2   3   4   5

  highly   disagree   neither agree   agree   highly
  disagree   nor disagree   agree

    k. The Air Force should have a plan to identify promising civilian logisticians at lower or middle levels and groom them for higher level responsibilities.

Round 1 consensus: 97% agree or highly agree.

Comments on 2k:
'We should identify the civilian 'below-the-zoners' and move them around as we do our military 'below-the-zoner'.'

'Create opportunities. The cream will rise.'

1. The background of the ideal senior civilian logistician should include an assignment with an operational command to gain user or retail logistics experience.

Round 1 consensus: 76% agree or highly agree.

Your further comments on section 2: _____

_____

_____

_____

_____

_____

TOPIC 3: MOBILITY

General comments:

'Mobility must be a factor for GM-15 level selections. Immobile GM-15s will not be considered for SES positions. Thus immobile GM-15s will not be considered and block other mobile GM-14s from working at the GM-15 level. As long as mobility at SES level is important, we must use GM-15 positions to develop mobile candidates.

'Mobility applies primarily to the senior civilians that are recruited and serve at the ALC level. They have a tendency to become parochial regarding that ALC's way of doing business. Mobility breaks that down and is the most persuasive argument for 'insisting' senior civilians be mobile. They need to acquire different views of how the business operates.'

'Nothing replaces geographic movement, not as an end in itself, but to create and to maintain the outlook of responsibility to mission and not location. Too often, those not mobile have primary allegiance to form/structure (maintaining local status quo) and not to the end product - making things better for the user.'

'Operating (combat), retail, wholesale, etc. are seldom co-located. Therefore, geographic mobility is essential to proper development of a senior logistician - military or civilian.'

'He should go where he is needed when he is needed or go buy a farm! This is a terrible weakness that hurts AFLC across the board - although better now than before. The 'shadow government' of senior civilians frustrates mobility, often refuses to accept an outstanding SES brought in from outside, subverts his work, and tries to force promotion selection into narrow limits favoring on-site selectees. This eventually can

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result in one or two SES having all the others at the ALC 'beholden to
them!' Bad news. We made some progress when I was AFLC/CC and this has
continued but every time you relax it starts up again. Moving is a
hardship but we are talking about highly paid people who have enormous
responsibilities. Neither the military nor industry will tolerate typi-
cal AFLC civilian lack of mobility. 'Move or retire' should be the
word!'

'The background they possess can only be meaningful by the prevention of
stagnation through mobility.'

'A senior level logistician should be ready and able to accept corporate
challenges wherever they may be or whatever they might entail function-
ally. This is the essence of 'General Management'.'

''Mobility', viewed in a 'positive' sense, is a fundamental requirement
in the field. Also, one must consider the stability of the individual
in performing certain project functions -- A 'Job Hopper' is not good;
however, one must be willing to move! Also, movement is necessary if
one is to acquire the desired experience.'

'Career broadening and breadth of experience are important but so too
are stability and development in a community. Community relations and
corporate knowledge are valuable assets.'

'Mobility is merely one factor which might be used to denote expanded
experience. Certainly, a physical/geographic move does add some form of
experience change. But, the number of such moves is relatively unimpor-
tant. What is important is functional experience in increasingly more
responsible positions.'

' . . . . [The programs employed to 'career-develop' civilians] fail to
recognize that civilians (a great majority) are not mobile. If they
were, they would most likely be in uniform. This lead-in is intended to
challenge your assumption which lies behind the question; i.e., to be as
good as senior military logisticians, civilian logisticians must experi-
ence the same patterns of career development.
      I believe that to be an impossible goal for the majority of civil
servants. I believe instead that they should be 'career-broadened'
within the functions of logistics and within the limits of their command
at the location where they serve.
      The question has to be: If we make senior civilian logisticians
look just like senior military logisticians, what are we going to gain
and what are we going to lose?
      The Air Force problem is that it gives duties to civilians which
require the experience of Colonels and General Officers. Senior civil-
ians, having deep experience let us say, at an Air Logistics Center,
will naturally optimize their decisions for results which favor the Cen-
ter or wholesale logistics in general. They have no other experience
base. On the other hand, the military officer in AFLC rarely has such
in-depth wholesale experience. His or hers is most often retail experi-
ence. Solution - since military personnel are mobile, they should get

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more wholesale (Center or Product Division) experience and should fill those senior positions.'

'[Relocation] depends on need - if to fill a square I disagree; if to meet a need of the individual and the logistics organization I agree.'

'[Relocation is] Not Applicable - job, not place.'

'This is a difficult question. The problem is that by forcing mobility we may force the system to select a less capable person in a specific situation. The trade off may be perceived as acceptable (i.e. more flexibility vs. 'best person') - I doubt it however.

'Mobility is not an end unto itself. At WPAFB one can gain every kind of experience. Let's not lose sight of the objectives.'

'Not important.'

'. . . . I believe very strongly that mobility for mobility's sake is wrong. In fact, we need to stress job stability, responsibility, and accountability. Gen Hansen must share this to some extent as he has recently directed that System Program Managers (military) need more stable, longer term assignments.'

'Mobility should be a specific willingness to satisfy a specific requirement. Movement for the sake of saying you're broadening yourself or demanding it to fill a position so you can say you're bringing in new blood is ludicrous and very expensive. If an individual has a specific deficiency that needs to be filled in order to satisfy an Air Force requirement he should consider moving. If an organization has a specific requirement that can only be satisfied by someone from a different location he should be recruited. Otherwise 'mobility' should not be a factor.

'Past moves are not an indicator of current mobility.'

Your further comments: _____

_____

_____

_____

_____

    a. The mobility attitude and the mobility history of a logistician should be factors in the selection of senior civilian logisticians.

Round 1 consensus: 76% agree or highly agree.

b. Mobility history is a reflection of the person's breadth of experience.

Round 1 consensus: 62% agree or highly agree.

c. If a civilian logistician has not been geographically mobile (hasn't relocated) then functional mobility (movement between different logistics disciplines or functional areas) is an acceptable indicator of that individual's breadth of experience.

Round 1 mean: 3.3   Your round 1 response:

Your new response:

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

d. How many geographic relocations should a civilian logistician (GS/GM-14 and below) make to be considered mobile?

Round 1 mean: 2.5   Your round 1 response:

Your new response (circle one):

1   2   3   other _____

e. How many different functional areas or logistics disciplines should a civilian logistician (GS/GM-14 and below) have experience in to be considered functionally mobile?

Round 1 mean: 2.6   Your round 1 response:

Your new response: _____

f. Senior civilian logisticians should be geographically mobile.

Round 1 consensus: 68% agree or highly agree.

Your further comments on section 3:_____

_____

_____

_____

_____

_____

TOPIC 4: ACADEMIC EDUCATION

General comments:

˙I believe in education and I think an undergraduate degree, at minimum,
should be a major factor in describing a senior civilian logistician.
Officers are required to have such a degree base. Civilians should not
be different if they expect to rise in responsibility and influence.
        I said that an undergraduate degree ought to be in 'Logistics Man-
agement' but I recognize there are relatively few places where that
might be obtained. So, I would encourage a second choice to be 'Liberal
Education' with a sound core of mathematics and science smoothed by the
humanities. The biggest consistent problems in logistics are people re-
lated and we need people who understand people running things. Far too
many of our military and civilian logistics people are trained and edu-
cated to be 'doers' rather than managers and leaders. That strong con-
centration on 'doing' is superb for the lower level people who must, in
fact, perform specific acts to get things done in the logistics system.
But, as a person progresses upward, into that hallowed class of
'logisticians', there must be less 'doing' and more 'directing' and
'delegating' and 'controlling'. The liberal education is better suited
to that, I believe.˙

˙I believe that, at the undergraduate level, a basic education in
'engineering' provides an excellent discipline, whether or not one de-
sires to continue in an engineering field. It provides a good back-
ground. At the graduate level, a 'business' background is desirable.
If this can be acquired in Logistics Management, OK. If not, then the
MBA approach may be more desirable.˙

˙The cost to the A.F. is the same for an educated employee or an unedu-
cated one. I elect the educated!˙

˙No B.A. in 'basketweaving' of course but pursuit of bachelor's or mas-
ter's degrees may be more important in what it indicates as to attitude
than content. The best product is measured ability in problem solving.
By the time SES is achieved he'll not be working out distribution pat-
terns or complex modification stress potentials on airframes, he'll be
supervising people that are. He needs enough technical knowledge so
that they can't snow him but needs best to know human behavior. If an
engineer, he will probably, after 20 years, not have been able to keep
up with that part of the 'hands-on' trade. He also needs to be able to
write, and to brief to get the work of his technical experts funded,
accepted, etc.!˙

˙Master's degree would be 'nice to have' versus 'should have.' Civilian
logisticians should be encouraged to continue the learning/education
process in the manner most effectively/efficiently suited to their spe-
cific development goals and requirements.˙

˙I would focus educational opportunities toward specific job related re-
quirements which benefit the organization now and for the next logical

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position the individual is likely to be assigned. Also, we should emphasize problem solving techniques and logical thought processes, not academic achievement.

Useful to have a degree, particularly in logistics-related functions or as noted above in a comprehensive M.S. program. The primary emphasis, however, is and must be, on today's performance as a measure of tomorrow's capability and as the principal determinant of promotion. Academic preparation is important - not critical.'

'Professional development through short courses and experience is more important.'

Your further comments: _____

_____

_____

_____

_____

a. Prior research has indicated civilian logisticians aspiring to senior positions should have a bachelors degree, even though there is not a firm requirement for one. If you agree, please identify the best field of study for this degree.

Round 1 top responses:

Logistics Management
Engineering
Degree important but area of study is not
Management

Please rank order the top responses (from 1 to 4) to indicate the best fields of study for a bachelors degree.

_____ Logistics Management

_____ Engineering

_____ Degree important but area of study is not

_____ Management

_____ other _____

b. By what grade level should a civilian logistician have a bachelors degree?

Round 1 mean: 10.75

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c. Senior civilian logisticians should possess a masters degree.

Round 1 consensus: 62% agree or highly agree

    d. If you agree, in which area of study should a civilian logistician pursue a masters degree? (check only one)

Round 1 top responses (number who chose them):

Logistics Management (7)
Business Administration (5)

Your new response (please check one):

    _____ Business Administration

    _____ Engineering

    _____ Liberal Arts

    _____ Logistics Management

    _____ Sciences

    _____ Management

    _____ Other (please specify) _____

    _____ Degree important but area of study is not

    _____ I DISAGREE with the statement

    e. By what grade level should a civilian logistician have a masters degree?

Round 1 mean: 13.6

    f. Civilian logisticians should be encouraged to earn an MS degree at the Air Force Institute of Technology.

Comments:

'[Highly agree] Just look at the graduates and what they are doing (and can do)!'

'I know of no other program which comes close to the value of [AFIT] Grad Log.'

'The rigor of AFIT is a good measure of determination.'

'Degree more important than place.'

`. . . AFIT is not renowned for its 'social' management curriculum.
Would rather hire someone who is 'trained' to motivate and lead people.'

`I think an AFIT master of science degree would be great for the civil-
ian logistician if AFIT would alter its curriculum to provide a more
general education, including logistics history, with less emphasis on
mathematical processes and 'doing' things. I certainly do not agree
that we need GM-15 computer programmers in logistics management jobs,
for example. Yet, we seem to educate them to become such.'

`AFIT is not the answer for everyone - I believe other master's programs
must be considered depending upon the individual and Air Force needs.'

`Pursuit of a master's degree on one's own time ought to be encouraged.
An M.S. degree from AFIT is valuable but is extremely expensive and
gives no indication of self-development.'

`. . . The civilian should be encouraged to earn a master's somewhere -
not just AFIT.'

`Very difficult to get the best people broke loose from the job long
enough to get the degree.'

`Again, some should - 1st to man the specific skills - 2nd to develop
the ability to think rationally, determine what is fact and what is as-
sumption - 3rd to keep AFIT up to date as they come in from the field
and challenge what is taught. But AFIT has had the same shortcoming
(now changed at some) as MIT, Cal Tech, etc. in that some of the best
technical graduates cannot write, brief, debate, argue, convince, per-
suade - they just write 'QED' and expect to 1) Get the military comman-
der to agree, 2) the OSD to approve, 3) the media to understand, 4) the
Congress to fund. We are talking about very senior people, who must
deal with a broad range of non-technical problems.

     f. Civilian logisticians should be encouraged to earn an MS degree
at the Air Force Institute of Technology.

Round 1 mean: 3.6   Your round 1 response:

Your new response:

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

Your further comments on section 4: _____

_____

_____

TOPIC 5: PROFESSIONAL CONTINUING EDUCATION (PCE)

General comments:

'The PCE courses I would propose generally do not now exist. They
should. . . The specific job-related PCE courses are fine and very valu-
able for the 'doers' but those striving to be the senior logisticians
have to learn material other than about their current jobs.'

'Any 'professional' in today's environment needs continual upgrading in
different skills. The topics may vary depending on functional responsi-
bilities. I see too many 'retired' individuals still on the job!'

'Regular training is important to keep abreast of technical, managerial
developments.'

'The object is to keep up-to-date and learn to apply advances in tech-
nology, management and economics to the world that logisticians manage.'

'They need enough updates on logistics trends to retain respect of those
they supervise but beyond that should have SENIOR skills . . .'

'Education should continue throughout a career with focus on interper-
sonal relations, communication, and self-awareness. Specific programs
should also offer cross discipline education . . .'

'Some need it - some don't. At the senior level, managers should not
feel pressure to continue formal education. Some do because they feel a
need to develop some particular skill. Believe it should be left at
that.'

    a. Professional Continuing Education is important to civilian lo-
gistician development.

Round 1 consensus: 64% agree or highly agree.

b. What kinds of courses/topics should civilian logisticians be taking as part of their professional continuing education?

Round 1 responses:

Artificial Intelligence	Labor-Management Relations
Budget (PPBS)	Life Cycle Management
Business Management	Logistics History
Carnegie-Mellon Exec. Development	Logistics Law
Columbia University Exec. Management	LSA/LSAR
Combat Logistics	Maintainability
Communication Skills (speaking/writing)	Manufacturing
Computer Applications/Literacy	Math/Statistics
Configuration Management	Military History
Contract Administration	Military Strategy and Tactics
Creative Thinking	Production Planning and Control
Dealing with EPA	Productivity
Economics	Program Management
Engineering	Public Policy/Administration
Financial Management	Purchasing
Harvard Business Course	Reliability
Human Factors	Security Assistance
Human Relations	Systems analysis
Information/Data Systems	Team Building
Integrated Logistics Support	Time Management
International Relations	Warranties

Please select the _five_ most valuable PCE courses from the above list.

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Your further comments on section 5: _____

_____

_____

_____

_____

_____

TOPIC 6: PROFESSIONAL MILITARY EDUCATION (PME)

General comments:

'For the SES who is going to the very top, this is very important. He needs not only to know the real problems the military has but those they

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PERCEIVE they have - their prejudices, fears, traditions, what makes them tick (or not tick). He also needs to learn about the THREAT, and that real people die when combat support is not forthcoming. He also contributes a great deal, introducing to the often naive operators (as I once was) the real world of what they need to do to help combat support, from requirements to how to treat and care for equipment!"

"PME, as currently structured, has benefit to senior loggies because they expose students to the broad spectrum of Air Force people and activities. As such, attendance is useful but not essential."

"PME is not essential, but it rounds out a logistician, and provides valuable insight into operational roles and military thinking. I feel I would be a better manager if I had completed ACSC or AWC."

"Individuals should participate in base seminar programs and off-duty education programs."

"I believe civilians can gain much from PME and they should be encouraged to participate in residence or seminar or correspondence. But, I don't agree that PME should be mandatory for them. I doubt the PME schools could handle the quantity of civilians necessary to meet mandatory criteria.
    Nevertheless, participation on a volunteer basis would be very valuable and helpful. For one thing, it would give some appreciation for the military side of our affairs. For another, it would build on the military experience of the civilian. I do think military experience ought to be a major factor in determining who might become a senior civilian logistician. But, I also know that thought is not commonly shared - particularly by the civilian employees."

"As important to civilians as military."

"I don't believe PME is more important than continuing education. The Senior Executive Fellows at Harvard is a superior education for a civilian (potential or current SES)."

Your further comments: _____

_____

_____

_____

    a. PME is important to the professional development of a senior civilian logistician.

Round 1 consensus: 66% agree or highly agree.

b. Civilian logisticians should attend PME <u>in residence</u>.

Round 1 mean: 3.6   Your round 1 response:

Your new response:

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

c. Please <u>rank order</u> the following PME schools from highest (1) to lowest (5 or 6) to indicate how valuable these courses are to senior civilian logisticians. (Use '0' for 'none' as often as you think appropriate.)

Round 1 modal responses:

1st - Industrial College of the Armed Forces (ICAF
2nd - Defense Systems Management College (DSMC)
3rd - Air War College (AWC) (or Army or Navy)
4th - Air Command and Staff College (ACSC) or equivalent
not valuable - Squadron Officers School (SOS)

Your further comments on section 6: _____

_____

_____

_____

_____

_____

TOPIC 7: PROFESSIONAL INVOLVEMENT

General comments:

'I firmly believe active involvement in professional associations is essential for the senior logistician. That involvement should begin at the GS-5 level and continue throughout the career. Belonging to, and participating in, several professional associations should be expected (demanded?) of those who aim to be classed 'logistician'.
     However, I see no difference between the military and civilian side of the house in this regard. I do not think it more important for the civilian to be professionally involved. Why should we say that is true? Is there some magic provided by the uniform that makes professional development less important? I do not believe that to be true.'

`It is important for BOTH civilian logisticians and for their military counterparts.`

`Good, because it becomes an avenue to exposure to the entire logistics field. Senior logisticians must have an appreciation, and to be highly effective a complete understanding, of supply, transportation, maintenance, fuels, munitions, commodities, FMS, logistics processes and new prospects in order to meet senior management responsibilities.`

`Again, depends. Some will find it extremely helpful to be known as a 'recognized expert', say in quality, software, maintenance, etc. That will open doors, get funding, add credibility to what they do to accomplish their mission. For most that will 1) take up too much time, 2) not be necessary. Attendance will help them keep up to date, show their support to subordinates, etc. Doubt if any SES would have time to be an officer, other than a figurehead, and still do his job.`

`At the senior level - items 7a and b should have been completed before becoming a senior manager. Active involvement should have been part of the training. Senior managers should resort to advisory roles. They have plenty to do in their senior positions. Qualification training is over!`

`Professional involvement should focus on primary job performance, not 'academia'.`

Your further comments: _____

_____

_____

_____

    a. What levels of involvement in professional organizations, such as SOLE or NCMA, are important for civilian logisticians? (please check all that apply)

Round 1 consensus: 66% agree - active member (attends most meetings and functions)

    b. What levels of participation in professional logistics symposia, seminars, and conferences are important for civilian logisticians? (please check all that apply)

Round 1 consensus: 72% agree - attendance, presenter
                       76% agree - panel leader, moderator

c. Professional involvement is more important for the professional development and broadening of civilian logisticians than for their military counterparts.

Round 1 consensus: 69% disagree or strongly disagree

Your further comments on section 7: _____

_____

_____

_____

_____

TOPIC 8: TECHNICAL COMPETENCE

General comments:

'I feel about SES as I do about Colonels and Chief Master Sergeants. They should be prepared to supervise any function. Where technically weak they should be good at assembling the right people to do the job and setting goals etc. for them, checking progress against schedule.'

'In most areas one not only needs to be a good manager, but should be technically competent in certain fields. The level of technical competence must be oriented to concepts, new technologies, computer applications, etc., versus the abilities to complete Exhibits --- of MIL STD --.'

'If I were the Supreme Grand Wizard, I would tell all budding 'logisticians' they must obtain basic knowledge in all 7 of the areas you list. I would tell them they might obtain this knowledge through on-job experience or through PCE courses or through correspondence courses. Regardless, they would have to prove to me they had acquired the knowledge. For this reason, I would support a career-long examination program as a means of measuring progress in the acquisition of these knowledges.'

'If these questions mean actually requiring multi-functional work experience, I don't feel that is necessary. What is beneficial is exposure to other functions. Understanding functional interfaces can only result from knowledge of other functional areas . . . Exposure to others areas is the key.'

'No function is any more important than any other.'

Your further comments: _____

_____

_____

_____

    a. Civilian logisticians aspiring to senior positions should have
technical experience in more than one logistics functional area. (see
listing in question 8.c. below)

Round 1 consensus: 93% agree or highly agree.

    b. In how many logistics functional areas should they ideally have

experience?

Round 1 consensus: 70% agree - three functional areas.

    c. In which logistics functional areas should they have experi-
ence? (In Column A please check as many as necessary and in Column B
rank order your choices with '1' being the most necessary.)

Round 1 mean rankings:

2.2 - System, Item, or Program Management
2.6 - Maintenance
2.7 - Logistics Planning
3.7 - Engineering
3.8 - Supply
3.9 - Procurement
5.7 - Transportation

Please select the three functional areas most important for the career
development of senior civilian logisticians. Rank order your choices
with '1' being the most important.

_____ Engineering

_____ Logistics Planning

_____ Maintenance

_____ Procurement

_____ Supply

_____ System, Item, or Program Management

_____ Transportation

d. In how many functional areas could potential senior civilian logisticians realistically be competent?

Round 1 mean: 2.7   Your round 1 response:

Please circle your new response:

2 areas   3 areas   other _____

e. Senior civilian logisticians should be technically competent in more functional areas than their military counterparts.

Comments on 8e:

'[Agree] In jobs longer.'

'[Agree] Because in most cases they are the management continuity.'

'[Agree] Because they spend their entire (for the most part) careers in the logistics functions and because we pay them for continuity as well as competence.'

'The civilian must make technical recommendations to military leadership.'

'Military are often stove-piped and do not know (or recognize) the interfaces.'

'Key word is 'technically'. This implies extensive detail experience/education in specific areas. Since the civilian tenure in AFLC is longer than the military counterpart, the civilian should be more technically competent.'

'Very few military have the chance to become competent in wholesale and acquisition logistics.'

'Military have less time available - spend years in one area at unit level - as they should.'

'Military managers bring field experience. We look to our civilian managers to provide technical knowledge. Military members may not be technically competent in any area.'

'Military will eventually leave the logistics field and proceed onto more purely management/leadership role thus leaving civilians behind to do the more technical tasks.'

'As a civilian - with their inherent stability - they will be able to move functionally across more areas than their geographically mobile military counterparts.'

'The whole subject is so broad - the MM's civilian deputy may be needed technically or instead need to work the civil service system to get, move, fire, reward people!'

'Depends on the job and the level - the more senior the job - the less technical the work.'

'See no difference between civilian and military counterparts.'

'A senior logistician (civilian or military) should have the same qualifications, as the Air Force will interchange their positions and assignments as the situation dictates.'

'The military counterpart should be able to mold the civilian to higher competence.'

'Civilians may be more competent in more areas but only because the military system may inhibit movement more than civilian system.

Round 1 mean: 3.2   Your round 1 response:

Your new response:

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

g. Senior civilian logisticians should possess more technical competence in their current functional area (current job) than their military counterparts.

Comments on 8g:

'[Agree] Continuity is value added.'

'[Agree] They are the STABILITY and technical core!

'That's what they're paid for. They've trained in a limited area all of their careers.'

'Given that most of the senior civilian logisticians will be in a major command headquarters, or the Air Staff, or high in a product division or ALC, I would agree they should be more technically competent in their current positions than their military counterparts. They, the civvies, form the base for continuity in these organizations. They remain while the military move on. They, by virtue of having longer time on the job, should be in the position and role of educators of their military counterparts where such education is required. I recognize that the military are often placed in controlling roles, over the civilians, but still the civilians can serve as teaching persons and they should.'

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'This is the true value presented by senior civilian logisticians. Not management, not leadership, but technical expertise.'

'We don't have enough blue suit technical people to go around. Ideally, we need blue suiters with absolute technical competence. We usually do not give them time to develop such long-term experience.'

'Neither military or civilian will ever have the necessary <u>technical</u> competence to do the <u>detail</u> work say on confirming whether or not to ground an aircraft <u>even though it will be their decision</u>. They need to be able to judge the technical competence of others!'

'The military are usually the senior individual and should know as much as anyone else charged with management responsibilities.'

'Military should develop thorough functional expertise at company grade levels.'

'With the requirement for mobility in senior positions the distinction between military/civilian is harder to make.'

'The civilian should lend stability, the military - innovation.'

'Currently this statement tends to be correct because of the stability in some areas, however it should not necessarily be the case.'

Round 1 mean: 3.2   Your round 1 response:

Your new response:

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

    i. Civilian logisticians should demonstrate competence in military logistics through testing or certification.

Comments on 8i:

'Performance, exercise, and demonstration testing and written examinations at career milestones should be the basis for certification. This should apply to both military and civilian logisticians.'

'There should be a certification system that has both testing and demonstration required.'

'Through a combination of OJT and certification testing.'

'As I earlier mentioned, I would support a career-long examination program for the budding 'logistician'. I would suggest it could be in the form of two efforts: One would be written essay type examinations graded

by a core of designated experts while the second would be occasional interview sessions with a panel of such experts. Thus, the oral expressions in panel interview could balance the written and expand on one's knowledge. I haven't taken the time to develop that idea thoroughly, but I would encourage it. Records would be maintained to reflect the examinations/interviews accomplished and to reflect the individual's relative knowledge as displayed in these efforts. These records would be prime items in promotion selection and job assignments.´

´I believe a series of tests comparable to bar exams for lawyers, CPA tests for accountants, engineering licensing exams for engineers, etc. should be developed for the 'professional' logistician. A special job series should be created for the 'professional' distinct from the supply, maintenance, inventory manager, etc. and the SES positions reserved for those who attain professional status. This program should be set up with full implementation about ten years in the future. No retroactive requirements and sufficient lead time for today's trainees and journeymen to prepare for future SES requirements and the intervening grade levels.
    . . . I believe the knowledge necessary to pass the test/certification process should be obtainable through combinations of experience and education, not solely education.´

´Set criteria and standards, then let people apply.´

´ . . . I would favor certifying logisticians - perhaps by SOLE.´

´Competency tests for certain grades could be developed.´

´Agree at the lower levels, you can test them. Disagree at the SES level - it is like having a general shoot gunnery, even if he's good at it, it does not show how he can perform as a general officer!´

´Haven't really considered it. Needs to be studied. Do not think civilian managers will think much of the idea. Not sure I like the idea of testing. Testing is not a good indicator of senior civilian managerial/leadership competence.´

´Appraisal system sufficient.´

´Competence or lack of it is demonstrated every day.´

´The way we - the bureaucracy - would administer such a system would insure its ineffectiveness.´

´Too much fragmentation to permit certification.´

´Testing examines book knowledge. Professional engineers, doctors, lawyers, and others get their certificates before they can practice. Technical competence comes from practice, also known as experience. You cannot test experience.´

'Why? How? I doubt we could write such an exam. We have enough trouble with blue suit certification and we don't do it for senior managers. Exception: depot level maintenance (wage grade) should be trained and certified in all critical tasks. We are now doing so and should continue.'

'Competency measurement in any profession is at best a hit/miss affair - the more important characteristic to be observed and 'measured' is the effectiveness of a person. To be competent by knowledge of a certain set of facts is not a meaningful measure if the individual cannot effectively use that knowledge.'

'Don't think it's practical. Need to develop POCs throughout community to identify candidates, to guide them, to identify weaknesses and correct. I believe ALCOA Aluminum has such a program and it makes a lot of sense.'

'Job performance - realistically evaluated - is best test.'

Round 1 mean: 2.8   Your round 1 response:

Your new response:

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

Your further comments on section 8: _____

_____

_____

_____

_____

_____

TOPIC 9: QUALITIES AND CHARACTERISTICS

General comments:

'Certain of the personal characteristics imply others.'

'A good leader will have all of these qualities.'

'The rank of these [qualities] would change with the organizational level.'

`[Integrity] Self-evident quality for all A.F. employees.`

`These [integrity and dedication] are part of this [leadership].`

`[Dedication and initiative] Visible in any 'leader'. [Communication] Is a function of leadership.`

`[Mobility] Not a quality.`

`Qualities that I feel are necessary ingredients in senior level personnel are open-mindedness, flexibility, and determination.`

`These are useful, but not conclusive. You cannot list, in cookbook fashion, attributes or skills that describe good people or successful people and then start filling in the matrix. Nearly all successful senior logisticians I know are missing some desirable traits, just as is probably the case in other career fields. On the other hand, we need to encourage our people to work on shortfalls.`

`To me, Federal Budgeting, Scheduling, and Resourcing are all subsets of Planning.`

`Computer literacy is extremely important. I regard it, however, as a tool which, once learned, should be no more important than knowing how to use a telephone. Tools are tools; nothing more.`

Your further comments: _____

_____

_____

_____

    a. Prior research has suggested there may be identifiable qualities which distinguish successful civilian logisticians from unsuccessful ones. Using the following list, please rank order (from 1 to 5) the five MOST IMPORTANT qualities for senior civilian logisticians. You may draw a line through any quality to indicate you recommend removal from the list or you may insert any other qualities you consider important.

Round 1 top responses:

Management	Integrity
Leadership	Dedication
Communication	Initiative
Common sense	

Please rank order (from 1 to 7) the top responses from round 1.

_____ Management   _____ Integrity

_____ Leadership   _____ Dedication

_____ Communication   _____ Initiative

_____ Common sense

     b. Research has also suggested other distinguishing characteristics which are appropriately considered learned skills. Using the following list, please rank order (from 1 to 5) the five MOST IMPORTANT skill characteristics for senior civilian logisticians. You may draw a line through any skill to indicate you recommend removal from the list or you may insert any other skills you consider important.

Round 1 top responses:

  Job knowledge
  Planning ability
  Analytical techniques
  Thorough staff work
  Problem solving/Systems viewpoint
  Resourcing ability (programming, budgeting, allocating)

Please rank order (from 1 to 6) the top responses from round 1:

_____ Job Knowledge   _____ Planning Ability

_____ Analytical Techniques   _____ Thorough Staff Work

_____ Problem Solving/Systems Viewpoint

_____ Resourcing Ability (Programming, Budgeting, Allocating)

Your further comments on section 9: _____

_____

_____

_____

_____

Is there anything else you would like to add?

_____

Thank you for completing this questionnaire and sharing your opinions.
Please mail this survey today to:

    AFIT/LSM (Bldg 641)
    Wright-Patterson AFB, OH 45433-6583

A self addressed envelope is enclosed for your convenience.

Appendix D: <u>Delphi</u> <u>Round</u> <u>Two</u> <u>Comments</u>

Topic 1: Basic Characteristics

Active Duty General

Probably the most significant thing pointed out here is our ignorance of history. All too often we don't refer back to "lessons learned."

Active Duty General

Logistics is not only inter-disciplinary; it's inter-MAJCOM (i.e. we're all interdependent). Too few of our senior loggies have experience on the other side of the "wholesale-retail" wall or the "acquisition-operations" wall. If these walls exist, it's because of narrow experience base.

Active Duty General

Keep the model pure. We should be describing what the senior civilian logistician should look like -- not what he is at this point in time.

Retired General

A senior logistics manager must be a versatile individual with broad based experience (other career field assignments are essential), sound education, geographical as well as type of logistic assignment mobility, and a demonstrated dedication to finding better ways of doing a most demanding and difficult job.

Retired General

I would again emphasize the senior civilian in wholesale logistics <u>ought</u> to know what the operating environment is all about.

Retired General

Because I did not see Round 1, I can't deduce whether we describe the senior civilian loggie as he is or as he should be. I think you describe what you see -- what I have seen are a group of hard working, dedicated people working in a system which has, quite frankly, failed them. There are reasons for that, unfortunately none of them very good -- under the Civil Service Commission rules and recently under OPM, there was no career development plan. Only recently (1980) when LCCEP was promulgated, have the functional managers stepped up to the responsibilities which they had hitherto abdicated. The early history of LCCEP is painful, as so much resistance to the concept existed and so many obstacles were raised to its implementation. What we had was a career progression pattern which was essentially random, with chance playing more a part in professional de-

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velopment than purpose. There was not then and, now only
"rudimentary form", any attempt to describe what a senior
loggie should have under his belt in terms of job experi-
ence, training, or education. The typical civilian, then,
tended to spend his or her entire career in one discipline,
i.e. maintenance, supply, material management, distribution.
They are , as I have described them, 10 feet tall and 2
inches wide. The robust 6-footer is rare -- very rare.

In our ALCs, it is the rule rather than the exception,
that the MM troop does not understand what the distribution
troop does for a living. There is even little recoghition
that logistics is essentially a process through which a part
or component flows. Very few people know what occurs beyond
their own segment of that process. So, they may be individ-
ually brilliant, yet functionally illiterate. It will take
a few years before we have a more well-rounded civilian
loggie at the GM-15 level as he comes through LCCEP.

SES Civilian
Let's not get too specific at the SES level. A well
rounded person is what we need.

SES Civilian
I strongly agree that managerial skills should be bro-
ken out under professional attributes. Community support is
of lesser importance and should not weigh heavily in
selection.

SES Civilian
Breakout personal qualities, i.e. managerial/leadership
skills, as a separate dimension. Certainly it is equal to
experience and education.

SES Civilian
Having an advanced degree should be a desirable at-
tribute as should experience in more than one geographic
area.

SES Civilian
Fully agree with comments about need for knowing and
understanding military logistics history. Also, community
involvement/support are critical. We talk to the choir so
often we fail to understand how outsiders perceive us --
it's not a good news story.

GM-15 Civilian
With regards to above ["Add a dimension called focus or
commitment -- Need to know if the senior civilian is inter-
ested in bettering the Air Force or tied to a geographical
area . . . "] -- Agree that commitment is important. I
don't see direct tie to mobility.
Agree with all other comments.

GM-15 Civilian

Good comment. ["Add a dimension called focus or commitment . . . ."]

GM-15 Civilian

Professional involvement should be subcategory of technical competence.

Agree with #1 and #2 -- travel is critical to understanding. Agree with #4 "whole person." #5, #6 Advanced degree is important in today's environment. #7 No! [comment about community involvement]. #8 Disagree -- not wanting to move does not equate to lack of focus or commitment. A lot of committed logisticians who are ready to meet mission requirements want to do it where they are and they do it well. I feel #9 is correct [need for background in military logistics history]. Is this not the reason for "Project Warrior"?

GM-15 Civilian

I agree with the need to identify management skills as an additional category under professional attributes. I disagree very strongly with the philosophy proposed that indicates "bettering the AF" and "commitment" are somehow related to geographical relocation. I'll say more on this in another section.

Academician

One major shortcoming I have seen in rising civilians is a lack of comprehensive writing and oral presentation skills. Perhaps communication skill is a needed category.

Academician

I strongly support the need for an advanced degree -- an MS in logistics management.

Experience and education and training indicate development of managerial competence, although it is not listed. I recommend you list managerial competence under professional attributes.

Academician

I am still of the opinion the model is OK. For effective use, it probably should not be too specific or detailed. It does give a general description of what ought to be found in a senior civil service "logistician." I think the emphasis must be applied to the development of "logisticians" vice "technicians" and the model does that. If more detail were to be added, or increased specificity, the model would soon become a checklist subject to all sorts of game playing by those who strive to advance without necessarily qualifying through performance. Obviously, the brief content of the model as you present it leaves fair

room for discussion, but that's good, I think, because it means that any later selection process would have leeway to work with. Obviously, not everyone can be developed like all others. There must be, and will be, variations from the standard. The selection process for advancement should be allowed that freedom of judgment and choice.

Academician
I feel that "personal qualities" highly influence whether an organization is being run effectively!

Agreed that in the past this was not necessary! If we are talking about the future, then an advanced degree may be highly desirable!

Topic 2: Experience

Question 2a(1):

Academician
I believe most of the respondents must have provided a very high number based upon (probably) AFLC experience. I provided a smaller number, one fifth the mean, because I think the number of people supervised is not necessarily of major importance and because I think the experience of a MAJCOM other than AFLC or AFSC should also qualify. In the other commands, the number potentially under the candidate's supervision is not likely to be so large. Again, I must state that I hope the model is not developing into something in which only AFLC and/or AFSC experience would count.

Question 2a(2):

Academician
Again, I provided a much smaller dollar figure than the mean because I was thinking of the other MAJCOMs as well as AFLC and AFSC. In those commands, most of the time the budding civilian logistician would never be able to manage the respondents' mean of $350 million! But, I certainly would not want that sort of built-in head wind to stand in the way of the budding logistician in SAC, for example.

Question 2a:

Active Duty General
The past jobs held, their importance in terms of type of activity managed, type and number of people managed, and fiscal responsibilities.

Active Duty General
Ability to help his/her subordinates realize their potential.

Ability to generate a sense of community -- get the team identified and excited about who they are and where they're going.

Ability to identify output-related (results-oriented vs. function-oriented) standards and measures of merit (goals) that help the team focus their efforts and see how they're doing.

Critical mind -- can he/she spot the right questions?

Active Duty General
1. How well did he perform -- no matter what the job.
2. Did he succeed in areas outside his "discipline." If he doesn't move, you can't measure that and that lessens your chance of predicting success based on experience.

Retired General
Type of assignments, geographical mobility, reputation for thinking of new ways to do things, demonstrated performance, and expressed career plan.

Retired General
Has the candidate really been in charge of anything? If you're cagey, you can always be a deputy -- go from GS-5 to SES and never be the "point man" . . . the real decision maker. Watch out for SESs who have never been in charge.

Retired General
That answer is purely objective and should be variable -- complexity of problem, ability to lead are the primary characteristics. Whether to lead 5 or 5000 -- is moot.

SES Civilian
Look at the job you have, then what factors you need to use. No one rule.

SES Civilian
Management responsibility over a large program or or ᷅nization. Diversity of assignments. Performance in those assignments.

SES Civilian
Primarily by the complexity of the program being managed and the relative difficulty of selling the program through the PPBS. User acceptance of the program as sold would also be a good qualitative factor.

SES Civilian
How well the job gets done.

SES Civilian
Anyone who thinks they supervise more than 3-5 people are kidding themselves. Perhaps some respondents were re-

ferring to the size of the organization -- that's a different story. Size of organization is probably a useful indicator.

SES Civilian
What job is being considered initially for SES entry? More SES positions are described in terms which limit applicability of experience. You're looking for a match. Each case is different.

GM-15 Civilian
Was he/she successful in managing an organization with diverse skills and grades?
Was he/she successful in managing programs with multiple weapon system, commands, services interface?
Was he/she successful in managing programs with high level interest, large resource requirements, complex technical, management and/or organizational issues?

GM-15 Civilian
Sufficient experience may often be determined by the job being filled -- however the broad base potential for SES positions would require that an SES -- ideally -- have experience 1) as a first line supervisor in a job that was very basic in logistics terms -- to understand, if you will, the "real world" problems in trench warfare, 2) as a second or third level with program experience (i.e., budget, program milestone accomplishment), 3) management of a large (300-1500) organization, 4) major command or USAF staff experience.

GM-15 Civilian
The type of experience. Circumstances under which acquired. Complete experience versus superficial exposure; i.e. some people have never "finished" anything! A full range of experience in career field.

GM-15 Civilian
I don't think anyone has ever supervised 254 personnel.

GM-15 Civilian
The two are not necessarily tied together. Management is technical competency in the tasks of the job at hand. Supervisory experience is available or how does individual deal with people, groups, etc.

Academician
Should have been in a position to set goals, establish and implement policies, approve procedures, and measure results. Does not require huge programs to accomplish.

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Academician

I consider the number of people _directly_ managed. One
does not manage 254 people -- one manages the supervisors of
those people. Six jobs is a minimum to determine an indi-
vidual's adaptability as well as the capability to take on a
new challenge and succeed at it. Key questions: 1) how much
actual control of dollars, manpower, and facilities has the
person experienced? 2) in supervisory positions did the
person accomplish anything beyond just doing the job
description?

Academician

I would look for hard evidence of performance. I
rather doubt that specific numbers of dollars managed, or
specific numbers of people supervised, by themselves have
much value other than to show that the person probably man-
aged to rise in the organization. However, I know that many
of those who have risen in the organization have done so be-
cause they allowed certain subordinates to do their jobs and
not because they happened to meet certain magic numbers.
Surely, we don't intend to use a certain number of years of
service as a criteria, do we? Why, then, dollars or people?
I have known a number of people who were truly magnificent
in the management of money, and others in the management of
facilities, who couldn't supervise or lead a Cub Scout pack
let alone an Air Force unit. But, those same folks would
quickly qualify if we just went for numbers.

I would rely on the evaluation of a select board of
peers who would analyze the individual's record, carefully
check with prior bosses (and subordinates too!), review ac-
complishments directly traceable to the person's efforts,
evaluate his/her performance on examinations and certifica-
tions, and so forth. I do not believe in promotion by
checklist and would therefore resist a program which encour-
aged "filling the squares with numbers". I believe your ef-
forts to advance the budding "logistician" demands consider-
able freedom for evaluation by a recommending board of peers
-- a board not constrained by specific numbers of
people/dollars/etc. managed -- although that information
would have value, of course, for the board's total effort.

In other words, I guess I am pushing for a "whole man",
or "whole woman", approach to selection of the coming senior
logisticians.

Academician

1) Managerial skills, 2) knowledge of the job (to in-
clude interface relationships), and 3) personal
characteristics.

Question 2c:

Active Duty General
    [Division] fits grade structure -- provides the environment and opportunity to do the things [listed in 2a].

GM-15 Civilian
    Key word is minimum. Would not want to eliminate candidate who had good branch level experience.

Academician
    I continue to think that "division level" of staff experience is the minimum acceptable. Anything more might eliminate those people in other than AFLC/AFSC. And, again, I think demanding anything higher as the minimum would apply unrealistic constraints. Suppose Peter Drucker were available to us as a young, up-coming manager who had not yet been able to rise above division but who was known far and wide as a "comer". Would we reject him because he had not yet been at a headquarters or higher? I think we should look for and identify our budding logisticians wherever we might locate them and then introduce them to the higher levels of experience, the bigger jobs, as we carefully observe performance and accomplishments, development of subordinates, and so forth.

Question 2h:

Retired General
    I have a problem with "combat" logistics. You only do combat logistics in war. Since we only have a war every 30 years or so . . .

Other Comments:

Active Duty General
    Prior military experience in the future with only a voluntary Armed Force will be hard to come by if we are honest with ourselves.

Active Duty General
    Make user/command experience a strong player in LCCEP initiatives and a strong player in GM-15/SES selections.

Active Duty General
    Experience is the tie breaker. When selecting a 15 for movement into a SES maker position, the boards I've sat on always gave the nod to the individual with a breadth of experience.
    Still believe ideal senior civilian should have retail experience. Many opportunities exist during early stages of

career. Retail experience could have been performed while in service.

Retired General
Very difficult -- few jobs for SES with operational units.

Retired General
Management of career development is essential if the Air Force is to succeed in having a professional logistics management team that is capable of managing an ever changing logistics structure in an environment of rapidly changing technology.

Retired General
Be careful of those "one-function" people who don't think multi-functional experience is necessary for SES.
I continue to believe in "grooming" young, promising people . . . military or civilian. You can spot a general-SES type when they are GS-7s/9s or captains.

Retired General
Experience is essentially functionally driven. Ideally, from grade GS-5 through GM-15, he should progress through at least two disciplines to a "fully qualified" level and have working experience in a third.
If it was possible, a 2-year tour in the operational commands would be very beneficial -- if only to walk in your customer's shoes -- to feel the real pressure and objectives of the customer commands. The AFLC or wholesale system does not respond to the retail, never as it could if it knew what pain the customer feels. Example: the AFLC system responds to MICAPs -- they will move heaven and earth to satisfy one --they feel management pain when MICAPs occur. But, as long as there enough assets to fill demands they have no concept of the work and failed sortie that the ops command suffers because something is failing too often. So a walk through TAC would be useful. As for combat logistics, the daily function of launching sorties, loading ordnance, it should be understood -- not necessarily experienced. That could drive better conceived mods, etc. to minimize downtime, improve remove and replace mentality in lieu of a money-saving remove, repair, and reinstall policy.

SES Civilian
We need to have and work a system.

SES Civilian
Experience in one of the combat commands (TAC/SAC) should definitely provide a better logistics perspective.

It is very difficult to manage a cadre -- you're bound to overlook some individual talent. Some peak early -- some mature late.

SES Civilian

Very interesting how "experience" flavored the responses. Might be interesting to explore.

The more you do, the more you know. Narrow experts are fine -- but not in SES manager jobs -- maybe S & T is the answer.

GM-15 Civilian

Knowledge of the various levels and functions (i.e. headquarters, subordinate units, Pentagon, wholesale, retail/supply, maintenance, transportation) is critical. On-the-job training is not the only, or in many cases the best, way to gain that knowledge.

GM-15 Civilian

I strongly support the requirement for an assignment with an "operational" (i.e. SAC, TAC, USAFE) command.

GM-15 Civilian

Agree with the concept of "create the opportunities and the cream will rise."

GM-15 Civilian

Wholesale logistics is the cornerstone of the logistics spectrum. The strength of that cornerstone has been derived from a relatively stable workforce. Deviation from that stability would be detrimental.

GM-15 Civilian

Perhaps the answer is there is no set trail to produce the perfect AF logistician, but the perfect logistician must have a feel for the wholesale and the retail -- must know the needs, demands, pressures, and priorities of the user and the wholesaler. Must know the requirements of combat -- must recognize the reality of "friction" in wartime and above all not be tied to the way "we've always done it" or an unchangeable scenario.

Experience equals understanding as impacts your mission, not necessarily two or three years in a job.

While I don't disagree I think [there is] too much emphasis on where the job is located rather than on what the individuals need to gain, learn, experience. TDY, details, projects may suffice.

GM-15 Civilian

There appears to be some polarization on question of what is a senior logistics manager -- a technician or a manager!

The senior manager must be the best combination of both, where best combination has a dependency on organizational level. At varying levels of organizations, i.e. Office of Secretary of Defense and Secretary of Air Force, JCS, Air Staff, or any MAJCOM headquarters, the higher the level the greater the policy management implications. This obviously goes far beyond technical knowledge. At lower levels of organizations below MAJCOM headquarters, the technical requirement becomes important but policy and management skills must remain high -- if I had to assign a number to the technical/management I would use a ratio of 30/70.

In addition, we cannot forget that there is a military manager with whom the logistics manager works. This combination should theoretically provide the correct blend of mission, policy, procedures, and values to "better the Air Force." I strongly resent the implications that the civilian must walk in the military mold in regards to PME, relocations, and experiences to be effective.

The senior manager must be effective in policy (public policy), public administration (including the budget process), leadership, strategic planning and decision analysis. He/she must understand the nature of the business and strongly identify with its mission/goals/values. As used here the word "understand" does not mean "technical expert." The decision making or policy development process employed by the senior manager provides for technical and non-technical information to be combined into a development of the best possible alternatives, strategies, and risks.

Academician

The senior logistician must understand and recognize completed staff actions. Just staff "experience" does not assure that knowledge.

Academician

I believe strongly that senior civilians should not be carbon copies of senior military logisticians. Civilians should be functional specialists; military should be logistics generalists.

I strongly disagree with this concept of civilian career development. If we want them to look like military, then they should be military. But, that loses the true value a career civilian brings to logistics management -- functional expertise. We must encourage, we must develop, functional expertise in our civilians.

Academician

A range of experience is essential. I doubt anyone can become a true "logistician" without broad experience and wide knowledge of many of the functioning elements of logistics. No one can have effective experience in all those functioning areas but we can expect, and demand, that the

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budding senior civilian logistician have experience in several of the areas. Further, we can expect, and demand, that this budding logistician display an ability to learn about and understand many of those areas in which he/she did not have the opportunity to work. This might be acquired by resident Professional Continuing Education, by correspondence courses, by seminars, by definite reading and study, by lengthy conversation with experts, and so forth. The opportunities are many and we should expect these persons to work them. It is for this reason, in part, I support some form of career-long examination and certification.

I think it highly desirable the senior civilian logistician have military experience. I don't believe it essential that the experience be in "logistics" (although that would be icing on the cake), but I do believe the experience of being in the military is invaluable. If the physically qualified young civilian does not have that experience, he/she should be encouraged to obtain it through the active reserve or the National Guard if they don't want to enlist or accept commissioning in the regular forces. But, I think the logistics advancement system finally agree upon should strongly emphasize that experience in the military is extremely important as a factor for top-level advancement.

I must, though, recognize that not everyone is physically capable of military service and we cannot, and should not, eliminate such persons from logistics advancement. So, while I strongly believe in the value of such experience, I could not agree with mandatory requirements for service. Those people unable to participate in military duty certainly cannot be denied logistics advancement.

I agree with the comment someone made on item 2k that we should identify "below the zone" candidates. Whatever program comes from your efforts should not insist on the old-style, cramped Civil Service routine with strong emphasis on seniority. We should be able to identify promising people early in their careers, help and guide those promising folks, and advance them without problem when our selection boards, and our processes indicate such action is wise. I know such action is done in many Civil Service areas today so I know it can be part of the logistics program, as well.

Academician

I agree that experience in operating commands is highly desirable (i.e. TAC, SAC, MAC). Disagree with the premise that knowledge of field operations in a "user" environment serves no useful purpose!

I still highly agree with a proposed career plan for "high-potential" candidates (like in some industrial firms). I would not leave it to chance -- you may discourage some good potentials!

Topic 3: Mobility

Question 3d:

Active Duty General
Can't have "standard." I've made 18 and needed them all!

SES Civilian
This implies mobility is good in its own right. I disagree.

Academician
I am against mobility, but this question demands an answer. A full colonel would have about 15 assignments behind him -- so too for an SES/GM-15.

Question 3f:

SES Civilian
I highly agree -- the alternative is stagnation!

SES Civilian
Agree -- but not strongly.

GM-15 Civilian
Only to satisfy specific mission or development requirements.

GM-15 Civilian
Only at SES level, and only when it makes good sense for all concerned.

Other Comments:

Active Duty General
Mobility must be a condition of employment for those going into the SES. It is invaluable to future progress for this command or any other command.
Mobility is part of being a senior civilian logistician.

Active Duty General
The USAF logistics community is interdependent. To be an effective manager/leader, one needs a "mind's eye view" of effect of his/her efforts on rest of community. This can only come through broad experience. Too many decisions are made reference effect on the immediate unit, ALC, etc.
"Mobility" as quantified goal or target misses the point. We need to recognize what the exposure did for the individual and how he/she reacted to it. Some people could move 10 times and learn nothing. Others gain innate recog-

nition of needs/priorities well beyond their functional (or geographical) field of view by osmosis. Average troop is somewhere in middle.

Active Duty General
Improper to compare military and civilian "mobility' -- two are very different. Mobility needs to be applied to all senior civilians. I am not nearly as concerned about civilians at the ALC level as I am about the totally immobile civilians at AFLC, the Air Staff, and DOD levels. That's a _real_ problem.
Geographic mobility is the only real measure. Functional mobility is a smoke screen. Mobility implies a willingness to learn the "company's" business. You can't do that working at the corporate headquarters only or at the field level only. Senior civilians are policy makers. Policy affects all levels.

Retired General
Still feel very strongly SES _must_ be mobile!

Retired General
For those selected for advancement to senior logistic management positions through an early implemented career development program, mobility and career broadening assignments should be a part of the plan.
Mobility is only one of many requirements that a successful logistician must accept. It, along with other important considerations, should be a part of career enhancement on a planned basis and mandatory for those selected for key logistic positions.

Retired General
Mobility at the _lower_ grades is essential . . . at the senior grades we should be looking for the senior civilians to furnish _stability_ for the come and go military. We can't have it both ways. To be a leader in the community a general's status gives him status . . . a civilian SES in business suit commands no such interest -- he must earn the status by being there for some time and serving the community over time.
I believe they (senior civilian logisticians) should be mobile -- but that does not mean they move around like their military counterparts. That's simply crazy -- even though you might end up with center "cronies" being promoted -- that's no different than our senior military promotions -- you'd better be "in" with the 4 stars or you're out.

Retired General
I believe mobility is important for two reasons -- it reduces parochialism and provides the opportunity to place

the right man in the right job. Crossfeeding of information
will flow through mobility.

Make mobility a factor to use when needed -- move only
for the need of the command -- not for mobility's sake.

SES Civilian

We need more people that are mobile. Therefore you
have to have a program.

SES Civilian

Like it or not -- if a broad view of the system is
needed and I think it is -- then mobility is a way of life
for logisticians at the senior level. If you want to be a
"technical" expert stay GS/M-13 or below!

SES Civilian

Individuals should be willing to move to broaden expe-
rience/perspective. Should not move people for sake of mov-
ing -- should satisfy needs of service and individual.

Senior civilians should be geographically mobile --
even involuntarily -- to satisfy needs of service.

SES Civilian

Mobility must be made a condition of employment. The
backlash from those caught in the rules changes is evident
in preceding comments. To not be mobile is not sinful --
but, it must be recognized as a disqualifier for advancement
beyond GM-13.

Perhaps the performance of those homesteading in
Pentagon positions proves the point best. They seem to
suffer from a "Jimmy Swaggart" syndrome.

GM-15 Civilian

No change. Obviously a highly charged issue.

GM-15 Civilian

This obviously is a sensitive and even emotional issue;
however, senior level (SES) mobility has to be an Air Force
policy in order to support a corporate mentality.

GM-15 Civilian

Tunnel vision view. ["He should go where he is needed
when he is needed or go buy a farm . . ."] This sounds like
"mobility for the sake of mobility." This position elimi-
nates too many good candidates from consideration and too
many times forces selection only from those willing to "play
the game."

The current arrangement of fairly stable civil seniors
combined with rotated military seniors works quite well.
Civilian mobility for the sake of mobility is foolish! Some
mobility certainly broadens but the quality of functional
experience is paramount. Career broadening opportunities

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should be provided but not forced. We can't stand the drop-out rate of good candidates caused by forced mobility.

GM-15 Civilian
Mobility for mobility's sake fosters disciplinary mediocrity. Specific capabilities to fit specific needs should be the ground rule -- not "mobility is good!"
You don't fix what's not broke.

GM-15 Civilian
Mobility is critical!
Must be mobile as part of progression.

GM-15 Civilian
Parochialism is the sign of a closed mind, not necessarily due to lack of movement. There are alternatives to mobility. I do agree that when a **need** exists that is a different matter. Some fine logisticians have not been mobile.

GM-15 Civilian
Senior managers are Air Force assets and should go where the AF has a need or should move to broaden their capability and to further develop appropriate management and policy skills. However, to tell people that they must be mobile for the purpose of proving their mobility, works at cross purposes in overall development and is therefore not cost effective.
To AFLC, mobility means mobility within AFLC. Opportunities to promote into an AFLC SES position from outside the command are "Zero."

Academician
Mobility is not a worthy measure of worth. Diverse responsibilities is a better measure.
They should go where they are needed and not go for the sake of going.

Academician
My position remains unchanged. If mobility (read: wide variety of logistics assignments at all levels) is a job requirement, then that job should be military, not civilian.
Section three assumes that all SES/GM-15 jobs require mobility in order to gain required experience. Therefore, civilians must be mobile. I advocate putting those jobs on the military manning document, while defining SES/GM-15 jobs which require functional expertise for which mobility is not a requirement.

Academician
I still believe that geographic mobility is not extremely important. But, on the other hand, I believe mobility in job experience is important. I would much rather

hire a person with a range of solid experience, perhaps acquired at one geographic site, than hire one who has flitted around the globe perhaps not doing much new or different at the various geographic sites. I have known some inveterate travelers who would volunteer for any long TDY, or for a PCS, just to be able to say they had lived in "Podunk" or "South Lobster", or ----. I admit, maybe some of those people would be obvious and would not be selected by the coming system. But, many of them are sufficiently wise about the "systems" to assure that job titles reflect what is desired rather than what is done! Of course, you can't blame geographic mobility policies for those conditions. But, I am trying to say that we should not blindly accept geographic mobility as a major selector point. Moving, alone, is not that valuable to military logistics systems.

I agree that senior civilian logisticians (particularly those we might have selected for advancement or for identification as "logisticians") should be mobile and willing to move to accept new and increased responsibilities. Unless such move is not a good idea because of the individual's health, or the family's health, the person should agree to move. If he/she doesn't, then perhaps that refusal should be considered in any further selection or advancement actions.

Academician
Needs to be mobile -- should go where needed and when needed; however, those with the power to "assign" must use common sense in building up a certain degree of stability. A good personnel review and evaluation system is appropriate.

Since logistics is "interdisciplinary" in nature; involves transportation and distribution; involves product support in the field; etc.; it seems that one needs to be geographically mobile in order to understand the overall job (particularly at a senior level).

Topic 4: Academic Education

Active Duty General
AFIT is one place of obtaining a degree, but a mixture of higher educational degrees is necessary. It's a lot like taking some officers from the A.F. Academy and a lot from AFROTC -- it's the mixture that counts.

Active Duty General
Education is a foundation -- don't make it a prerequisite, but realize its contribution to performance and the potential for more performance.
Don't need to "encourage" all -- too many for the school [AFIT]. Pick and send our best just like blue-suiters.

Active Duty General

My experience at the ALC level indicated too few "senior" managers had the requisite management skills to perform efficiently. They were effective -- but at a cost. Formal education would have helped that situation. MBA type degrees are a must for senior logisticians -- civilian and military.

AFIT is just another school, and is not the issue. Don't let this survey become a reason to justify AFIT.

[Bachelors degree in engineering is] overplayed. Anytime we have a _real_ engineering problem we turn to the contractor.

Retired General

I believe an engineering degree is highly desirable as the basic formal education, but an advanced "management" degree should be considered essential to the senior logistician of the future. Know and understand the basis of our technology revolution, but be able to lead, direct, and control.

AFIT has shortcomings as do all institutions. But, it is a part of the Air Force and if changes are needed we can do more with AFIT than most other institutions.

Retired General

In retrospect -- AFIT is expensive and not for everyone. A civilian is _not_ required to "payback" for education -- and -- AFIT is more technical than "upper level" needs -- _so_ I can't agree AFIT needs to be the one.

Retired General

Education is necessary -- the educated person is more capable of accepting change, recognizing need, finding ways to solve problems. It stresses not what you know but that you have the "ability to learn."

It matters little unless you are going to be an MD, engineer, etc. Education broadens your horizons -- enhances your understanding of other areas. To do -- go to tech school -- to learn get a liberal arts degree.

SES Civilian

In order to be competitive, a strong technical background and a masters degree are imperative at senior levels.

AFIT may not be a liberal arts institution, but it instills an operational flavor to masters programs! Let's remember who our customer is -- it's not the general population, it's the military -- we have to support the user, the operational military period!

SES Civilian
Believe undergraduate degree is essential.
[AFIT is] too technical -- it is geared at the GS-12 level.

SES Civilian
Should have bachelors degree as minimum -- masters preferred.
Don't know much about the AFIT course, except most graduates I've talked with about it, recommended it highly. It should not be the only source of MS degrees for logisticians.

SES Civilian
Engineering education still provides the basic work ethic discipline that can branch out successfully into management. History and English majors often succeed due to raw capabilities and communicative skills. Look out for bean counters -- too narrow.
Agree with comments about forcing students to do too much rote work. Broaden horizons and subject. Good grief, AFIT still acts (at times) like a school panting after accreditation.

GM-15 Civilian
A college degree should be required as policy; however, some exceptions will be made. Advanced degrees are beneficial and should be considered when other factors are equal in selection process.

GM-15 Civilian
I have found a bachelors degree to be sufficient if in an analytical discipline; however, an MBA is certainly "desired." Should not be mandatory. Other masters also acceptable, i.e. economics, logistics, administration, etc.

GM-15 Civilian
Academic degrees are indicative of an individual's drive, persistence, learning ability, self starter, etc. Those characteristics provide the base for development through experience of the professional logistician.
AFIT is a very good school and logisticians would benefit by earning an MS from that institution; however, they would also benefit from the same at Texas A & M, LSU, University of Nebraska, etc.

GM-15 Civilian
We should not accept non-degree.

GM-15 Civilian
It's the mental exercise in a masters program that's important. Too often we dwell on which subject matter is

better. I agree that writing and speaking skills are critical to any senior logistician -- must have.

The mental exercise can be achieved at several institutions -- AFIT is nice, but not the only way.

GM-15 Civilian

A bachelors degree should be a firm requirement for all senior managers.

Academician

AFIT is very applications oriented and is not for every civilian logistician. Those with the ability should be encouraged to attend.

Academician

Today, one cannot enter management training in industry without a bachelors degree. One cannot become an engineer without the degree, nor an accountant. Other professions require advanced degrees at the entry level. By what logic can the Air Force justify accepting senior logistics managers (civilians) with a high school diploma?

Excellent recommendation [to require logistics history at AFIT]. Wrong -- you need to know the tools of your profession [regarding comment on GM-15 computer programmers as a product of AFIT].

The key word is encouraged [question 4f]. It is the best degree for the profession. But I also agree that education in the liberal arts and in business administration is of exceptional value. Not everyone can go to Grad Log, and the profession will benefit from a leavening of scholars in other disciplines.

Academician

I continue to believe the budding logistician should earn an undergraduate degree by the time he/she reaches supervisory level. The mean for round one was grade 10.75. I think that a bit high but will concur.

I further believe the logistician should not stop at the undergraduate level but should work for a graduate degree before grade 13. I believe a graduate logistics degree would be best, either at AFIT or a civilian school, but would be closely challenged by a business masters or liberal arts.

I continue to hold the idea the person should, in the masters work, be concentrating on running things rather than learning how to do things. I cannot see GS/GM-13 designated logisticians, or potential logisticians, actually doing computer programming, actually doing large scale computations, and the like. These people should, by this time, be in a position where they are managing organizations and leading people who do perform those tasks.

On the other hand, these people should "do" certain things and do them well. They should be able to speak and write with logic, understanding, and conviction. They should also be able to read with understanding and able to listen with attention. They will be involved often in presentation of ideas, reporting on project progress, receiving reports of progress, and so forth. They cannot be functional illiterates as, unfortunately, so many might be today. Therefore, I believe a good part of their continuing education efforts should be directed to improving skills in reading, writing, and speaking. The USAF really should bite the bullet of cost and assure courses in such topics are continually available so the potential logisticians, and others, can be expected to attend and improve.

Academician

I still feel that this is a desirable approach [an undergraduate degree in engineering and a graduate degree in business]; on the other hand, a good business-based education is acceptable.

While I agree that perhaps the "degree is more important than the place" (as stated), AFIT does provide that environment in which the civilian logistician has to manage in the future.

Topic 5: Professional Continuing Education

Active Duty General

The most effective senior civilians I know are "leaders." They know people. They know how to motivate and inspire. They didn't learn that taking advanced courses in purchasing.

Retired General

My choices may seem strange [communicative skills, information/data systems, program management, budget, contract administration], but I find few civilians even have the communication skills (writing/speaking) because they don't go to SOS-ACSC etc. in numbers as the military does. Info/data systems is a must to understand for our future loggies. Loggies do not understand program management in the true sense of the word -- yet they have mega-buck mods to manage. Budget -- few loggies want to understand that AC "stuff." And contract administration -- fewer still get involved and understand the world of contracting -- but they could do a world of good if they understood contracting.

Retired General

Get a broad education -- in generic topics -- not specific applications.

SES Civilian
     Individuals should plan to participate in at least one
professional education program each year.

SES Civilian
     Avoid narrowness.

GM-15 Civilian
     This is really dependent on individual strengths and
weaknesses.

Academician
     All professions must continue the continuing education
of their members.

Academician
     Every comment is appropriate and every subject listed
is valuable. I tried to choose those subjects which have
breadth for developing managers in logistics.

Academician
     Professional Continuing Education is, to me, the
essence of long-term career success. We surely do not want
our logisticians to become "professional students" but we do
want them to be constantly alert to learning opportunities.
What better way than by permitting them personal involve-
ment, frequently, in short (one to three week) courses help-
ful to their career advancement? I know that many people
feel taking time away from the job is not a good thing to
do. But, not only is the education valuable but so is the
association with a group of peers facing similar problems
and difficulties, who, at the moment, are in class together.
The growth possibilities of after-class, and in-class, dis-
cussions is tremendous. Plus, for everyone there is value
in getting away from the office and telephone for a short
time -- it is a form of re-creation for the mind and body!

Academician
     The response to the above depends on the individual's
background, current skills, and the particular job in which
he/she is employed. The above priorities may be different!

Topic 6: Professional Military Education

Active Duty General
     PME is something that should be sought out by progress-
ing senior logisticians. Those that take advantage of it
have a leg-up on the rest of the contenders.

Active Duty General
     The serious senior civilian will seek out PME. Look
for them. They are keepers. PME is a great discriminator.

All senior schools provide equal benefit. The point is to go. ACSC and SOS are of no real value to SES.

Retired General
All senior logisticians should attend one PME course in resident status.
It is essential that joint service exposure be provided to our senior logisticians.

Retired General
PME -- useful but not mandatory.

SES Civilian
PME is good to have but not necessary.

SES Civilian
DSMC should not be considered PME any more than AFIT is.

SES Civilian
Agree with annotation on previous page. ["PME is not essential, but it rounds out a logistician, and provides valuable insight into operational roles and military thinking. I feel I would be a better manager if I had completed ACSC or AWC."] PME is helpful but not mandatory.

SES Civilian
Should try to have balanced background that includes PME and professional ed.
All PME programs have seminar/correspondence courses and should be pursued if one expects to be best qualified.

SES Civilian
Senior PME is important. This is not General Motors (thank heavens).
Agree with results.

GM-15 Civilian
PME should be provided on much the same basis as PCE, that is , make PME more available and open classes at major locations for civilians.

GM-15 Civilian
PME good but not essential.

GM-15 Civilian
As a graduate of ACSC, I consider that year, in residence, as a major milestone (and growth period) in my personal development!!
I couldn't argue based on knowledge [about the rankings assigned to PME schools], but gut feel is that ACSC as 12 or 13 might be better than ICAF or AWC in later years at higher

grade. I really got a boost in some critical areas through my ACSC experience.

Academician
PME would broaden the understanding of a logistician and can't help but be of benefit.
PME should be encouraged but not to the detriment of PCE.

Academician
I'm a bit ambivalent on this. PME is military education. I see no advantage in it for a civilian, but no disadvantage either. Seminars in their functional areas would be best suited to the purpose.
Of your choices, DSMC for an acquisition logistician is best. Similar schools for other civilian functions would be most appropriate.

Academician
Our budding logisticians should be encouraged to participate in PME, either in residence or via any of the nonresident schemes, from the time they are GS-5. I would think such participation would be a factor of evaluation in every step of advancement/promotion. Participation would reflect the attitude we want -- an attitude of desire to learn and know about their professional discipline (military logistics). The opportunity should be given them to participate in the PME of all four military services, not just the USAF. Many of them will be in positions requiring close association with, and coordination with, the military and civilian leaders of other services, and other countries. PME could be of immense educational and utility value throughout a career.

Academician
Both PME and continuing education are important.
An "in-residence" course generally helps one to better understand the environment in which one will operate in the future!

Topic 7: Professional Involvement

Question 7c:

Retired General
I would say that's true simply because the military have great mobility -- move from base to base -- job to job -- and have career broadening assignments -- civilians -- for the most part don't -- hence -- more valuable to a civilian.

Retired General

Because the military person literally lives his job 24 hours a day -- professional involvement is more useful to civilians than for military.

Other Comments:

Active Duty General

Professional involvement is part of the job that helps broaden the horizon.

Active Duty General

Professional organizations need to be guided so that they broaden members, not promote functional stovepiping. Left to their own devices, the latter is a natural and non-productive (destructive) course.

Retired General

Participate (military and civilians) but keep it in proper perspective. Learn but don't waste time on too many make work, pat-on-the back meetings, etc.

Retired General

<u>Active</u> involvement will help many ways -- but you can overdo it. It's a matter of how much <u>time</u> is in a day.

SES Civilian

Professional involvement is important to keep abreast of developments. Professional groups routinely provide faster training opportunities on new policy areas/changes than the government can provide.

SES Civilian

Support consensus.

SES Civilian

Professional involvement is certainly a desired at-tribute, but should not be discriminator for selection to SES.

Professional involvement not more important than professional development.

SES Civilian

To not be involved is to be incomplete -- too much real world info flows in this channel to be ignored.

Join -- participate -- enjoy.

GM-15 Civilian

I find myself agreeing with consensus opinion. It is difficult for me to substantiate such a degree of correlation between involvement in professional organizations and job performance or impact that I can support.

GM-15 Civilian

I agree it depends on the individual and the organization/ association. Some professional organizations are merely social clubs. The level of intellectual gain is minimal!

Academician

Involvement in professional associations brings an awareness that the logistician is a professional and brings obligations.

Professional involvement is an asset to the individual and his organization.

Academician

I agree with the consensus, but again stress that very active participation (chapter officer, presenter of papers) should be confined to the formative years. Senior people can and should make speeches, lead panels, etc., even though the time required impacts upon the job.

Academician

I have no further comments. The subject seems to have reached consensus that belonging to, and participating in, professional organizations is necessary and important. I agree wholeheartedly.

Topic 8: Technical Competence

Question 8g:

GM-15 Civilian

One important point is that civilians may have to be more competent than their military counterparts. Present military reductions will probably effect non-rated the hardest.

Level of logistics competency of civilian and military counterpart is dependent upon individuals and location of job.

Question 8i:

Active Duty General

For senior logisticians it's just not the answer. They have proven their capability or they wouldn't have progressed in the leadership role. There are very capable people who don't test well. What do you propose to do about them -- lose the resource?

Active Duty General

Performance talks. Test scores at management level don't tell the capability or potential for management/leadership.

Retired General

No exams -- bureaucratic jungle.

This I have mixed emotions about. I will reiterate -- you can't *test* for leadership . . . sure, you can put things on paper that people can or cannot answer, but leadership is an artform practiced many different ways, some successful for some people -- but *not* all. So my thoughts are *not* to test at the senior level -- but I'm leaning towards testing at the *lower* grades . . . *not* administered by the military or any governmental agency -- we'd screw it up. The idea that *SOLE* would do it is intriguing. I think we need to look at that idea -- again -- testing would *cease* at the GS-14/15 level.

Retired General

I don't understand the question. Is military logistics a new discipline? I thought logistics was logistics -- with base level practitioners and depot level practitioners.

GM-15 Civilian

Appraisal system sufficient.

GM-15 Civilian

This is just another layer of performance evaluation. We can barely cope with the system we have and either should improve or abandon. Adding yet another measure of competence would be counterproductive.

Academician

I could not make a competency test and I doubt one could be written. There are no "right answers" in management. There are only workable decisions and unworkable decisions.

Academician

I favor a career-long testing and certification process as part of selection/promotion. I know the preparation of examinations, and the grading, would be very difficult but that is no reason not to do them. We should have some means of assuring our potential "logisticians" are truly acquiring the background and knowledge we believe they must have. The current, and likely, appraisal systems won't do the job because too many supervisors are "chicken" and will not truthfully state reality. We must have some process in which the individual, alone, establishes his/her own competency for advancement/promotion selection by a board of peers. Testing and certification will do that. Such processes need not be life-threatening and could be made to be something to be approached with minimal stress, if not anticipation.

Other Comments:

Active Duty General
    If you are going to be a logistician, this is logis-
tics! You can't stovepipe in one area.

Active Duty General
    Technical competence -- hands on -- is the bedrock of a
manager's ability to see beyond his in/out baskets.

Retired General
    We are looking for broad gauge leaders! Therefore, all
[functions] are important.

Retired General
    Technical competence is demonstrated at lower levels --
but should be able to guide and teach subordinates.

SES Civilian
    Be careful on definition of technical.

GM-15 Civilian
    Experience and education in other areas is sufficient.
Don't need to overemphasize mobility and job experience in
other functions.

Academician
    Again, I disagree. The senior civilian should be a
specialist, not a generalist.

Topic 9: Qualities and Characteristics
Active Duty General
    Qualities: integrity, flexibility, sound reasoning
ability. Characteristics: evenhandedness, common sense,
good listener.

Active Duty General
    Don't make too much out of anything except integrity --
it's #1. The others are all intertwined.

Active Duty General
    All [qualities] are equal. Doesn't do any good to have
a dedicated moron for a boss.
    I'm having great difficulty with questions 9a and b. I
can't differentiate between a senior civilian's ability to
analyze and to plan. He must be able to do both equally
well and both are equally important. I think you are off on
a tangent and am concerned you will use these prioritized
responses to prove a point. Don't do that.

Retired General

Above all else, have integrity -- it is the key to all that follows.

Retired General

Intelligence and integrity are the two main characteristics -- all else is subordinate.

Be a systems thinker -- look at the whole, not the bits. Understand the process in the entirety -- not the procedure alone.

SES Civilian

Agree with annotated comment on previous page -- cannot rank! ["These are useful, but not conclusive. You cannot list, in cookbook fashion, attributes or skills that describe good people . . . "]

SES Civilian

Must not forget integrity and accountability -- otherwise, run for Congress.

GM-15 Civilian

Integrity, leadership, dedication.

GM-15 Civilian

Computer literacy will rank with writing and speaking. It will replace the telephone as prime communications media.

GM-15 Civilian

Management is a skill.

Academician

Job knowledge is often confused with procedural knowledge. A sound understanding of principles and their application or misapplication is more important.

Academician

The topic was difficult to evaluate and answer thus making it perhaps the weakest part of your study.

Not easy to answer because all [qualities] are equally important. And by the way, leadership is a subset of management.

Miscellaneous Topics

Retired General

I have not emphasized joint service duty, assignment to treaty nations (NATO, etc.) or the many facets of international logistic support management. I consider these to be opportunities for our mature senior logisticians and should be addressed as special topics.

Retired General

Civilians are just people like anyone else. They can be led and they can lead. They have strengths and weaknesses. Strengths should be nourished and weaknesses should be addressed by training. Broad systemic views are important. Rote bureaucracy is to be avoided -- let people think.

SES Civilian

Interesting study. In five years the original SES elephants will go to the boneyard. What follows is cause for concern. Some shallowness out there; square fillers rather than doers. Not all bleak, but still a cause for concern. The uproar in personnel management aided by non-supportive administrations and the Congress have diminished the resources.

GM-15 Civilian

While we have discussed what a senior civilian logistician should be, I'm not sure we have addressed one key question. Why do we want civilian logisticians in the AF? I think, in theory, it could be argued that we really need all military. These resources can be used in a combat area. So they are more critical and needed; however, the facts of life are that the Services cannot have all the military resources they want. In addition, some jobs just do not require military. Now then, how do we augment the military with civilians and what is their function and role? Once defined you educate and train to fill that purpose.

Air Force mission "to fly and fight" is not a civilian occupation!

Academician

Describing a senior logistician is as difficult as defining logistics, which no one has done adequately. As any senior executive, the logistician must be flexible and adaptive. This implies expanding breadth of experience and knowledge.

Academician

I expect that I remain in the minority in most of your topics. For your understanding, let me ask, "Why did the USAF keep military people in senior positions in TAC, SAC, MAC and so on?" Why, because of the importance of the missions of those commands to the overall Air Force mission. "Then, why did the USAF keep military people completely in charge of AF Systems Command?" Same answer. "Why are civilians so much in charge of AFLC?" It must be that the AFLC mission wasn't regarded as quite so important to the Air Force. I cannot accept that reasoning. But blue-suiters gave logistics to civilians in the main, and now most advocate making those civilians look like military

career officers. Because logistics creates and sustains
combat capability, military professionals must manage (plan,
organize, and control) it while making best use of civilians
where their expertise is invaluable -- the functional areas
of logistics.

Appendix E: <u>Weighting Survey</u>

Mr. Arthur G. Atkins   11 May 1988
AFALC/CCA
Wright-Patterson AFB, OH 45433

Dear Mr. Atkins:

I am asking for your assistance in a research project being
conducted by the AFIT School of Systems and Logistics. I am
involved only in an advisory and assisting role, but I have a
deep interest in the topic.

Captain Ralinda Gregor, a graduate student, is doing thesis
research to provide a better understanding of the role and
environment of the senior logistician. In the past few years,
AFIT research has concentrated on senior military logisticians.
This year, Captain Gregor is concentrating on senior civilian
logisticians and has already completed a Delphi survey of
respected senior military and civilian logisticians. The survey
results enabled her to create a model of the requirements for a
professional senior civilian logistician. The components of the
model were obtained when a 60 percent consensus was reached by
the general officers, senior civilians, and senior academicians
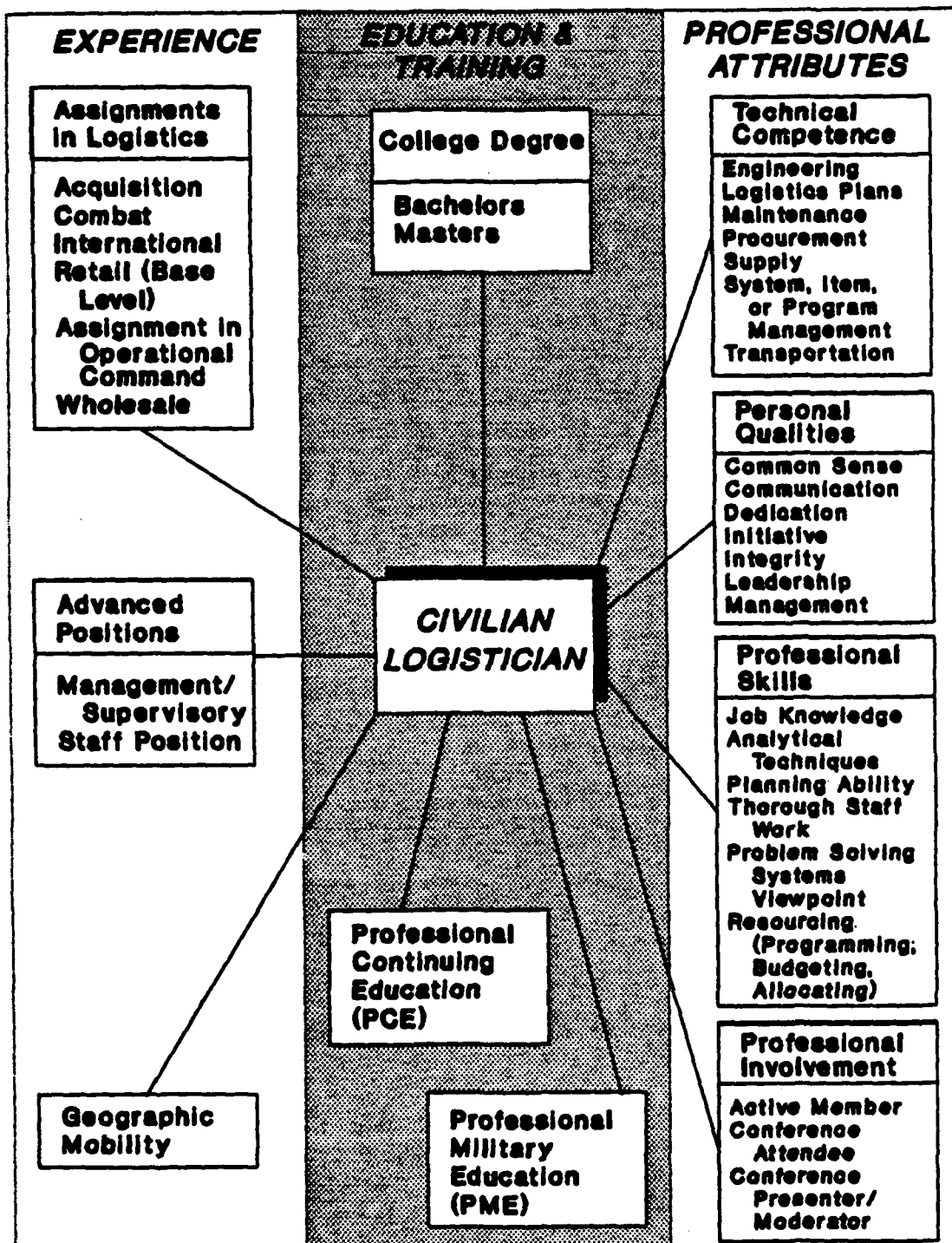in the survey group. A copy of the model is attached.

The model components must now be weighted and assigned some
form of priority. That's where we need your assistance. Your
background in logistics, experience working with senior civilian
logisticians, and insight will be extremely useful to this
research. The weighting survey shouldn't take more than 30
minutes. We would appreciate it very much if you would respond
to the survey and return it in the enclosed envelope within one
week. Ralinda is on a tight time schedule with her thesis
research; your quick response will help her complete this
potentially high-value thesis.

If you have any questions about the model or this weighting
survey, please call Captain Ralinda Gregor at the school,
(513)255-5023 (AUTOVON 785-5436), or at home (513)293-3189. We
would appreciate your comments, suggestions, or ideas about the
model and this research. Thank you for helping.

My best wishes, always.

JEROME G. PEPPERS, JR.   2 Atch
Professor Emeritus   1. The Model
School of Systems and Logistics   2. Weighting Survey

EXPERIENCE	EDUCATION & TRAINING	PROFESSIONAL ATTRIBUTES

EXPERIENCE

Assignments in Logistics

Acquisition
Combat
International
Retail (Base Level)
Assignment in Operational Command
Wholesale

Advanced Positions

Management/ Supervisory Staff Position

Geographic Mobility

EDUCATION & TRAINING

College Degree

Bachelors
Masters

CIVILIAN LOGISTICIAN

Professional Continuing Education (PCE)

Professional Military Education (PME)

PROFESSIONAL ATTRIBUTES

Technical Competence

Engineering
Logistics Plans
Maintenance
Procurement
Supply
System, Item, or Program Management
Transportation

Personal Qualities

Common Sense
Communication
Dedication
Initiative
Integrity
Leadership
Management

Professional Skills

Job Knowledge
Analytical Techniques
Planning Ability
Thorough Staff Work
Problem Solving
Systems Viewpoint
Resourcing (Programming, Budgeting, Allocating)

Professional Involvement

Active Member
Conference Attendee
Conference Presenter/ Moderator

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COMPLETE THIS PAGE FIRST

Given a total of 100 points, please allocate them among the following three model dimensions based on your opinion of their <u>relative importance</u> to the professional senior civilian logistician.

EDUCATION AND TRAINING	_____	points
EXPERIENCE	_____	points
PROFESSIONAL ATTRIBUTES	_____	points
	Total 100	points

COMMENTS:

COMPLETE THIS PAGE SECOND

Given a total of 100 points, please allocate them among the categories which describe each dimension based on your opinion of their relative contribution to that dimension.

EDUCATION AND TRAINING

    1. College Degree   _____ points
    2. Professional Continuing Education _____ points
    3. Professional Military Education   _____ points

                             Total   100 points

EXPERIENCE

    1. Advanced Positions   _____ points
    2. Assignments in Logistics   _____ points
    3. Geographic Mobility   _____ points

                             Total   100 points

PROFESSIONAL ATTRIBUTES

    1. Personal Qualities and
        Characteristics   _____ points
    2. Professional Involvement in a
        Logistics Organization   _____ points
    3. Professional Skills   _____ points
    4. Technical Competency in Logistics
        Functional Areas   _____ points

                             Total   100 points

COMMENTS:

COMPLETE THIS SECTION LAST

Given a total of 100 points for each model category, please allocate them among the corresponding model elements based on your opinion of their <u>relative contribution</u> to the category.

ADVANCED POSITIONS

1.	Management/Supervisory Positions	_____	points
2.	Staff Positions	_____	points
		Total 100	points

ASSIGNMENTS IN LOGISTICS

1.	Acquisition Logistics	_____	points
2.	Assignment in an Operational Command	_____	points
3.	Combat Logistics	_____	points
4.	International Logistics	_____	points
5.	Retail (Base Level) Logistics	_____	points
6.	Wholesale Logistics	_____	points
		Total 100	points

COLLEGE DEGREE

1.	Bachelors Degree	_____	points
2.	Masters Degree	_____	points
		Total 100	points

PERSONAL QUALITIES AND CHARACTERISTICS

1.	Common Sense	_____	points
2.	Communication	_____	points
3.	Dedication	_____	points
4.	Initiative	_____	points
5.	Integrity	_____	points
6.	Leadership	_____	points
7.	Management	_____	points
		Total 100	points

PROFESSIONAL INVOLVEMENT (Logistics Society)

1.	Active Member	_____ points
2.	Conference Attendee	_____ points
3.	Conference Presenter/Moderator/ Panel Leader	_____ points

Total   100   points

PROFESSIONAL SKILLS

1.	Analytical Techniques	_____ points
2.	Job Knowledge	_____ points
3.	Planning Ability	_____ points
4.	Problem Solving/ Systems Viewpoint	_____ points
5.	Resourcing Ability (Programming, Budgeting, Allocating)	_____ points
6.	Thorough Staff Work	_____ points

Total   100   points

TECHNICAL COMPETENCE

1.	Engineering	_____ points
2.	Logistics Plans	_____ points
3.	Maintenance	_____ points
4.	Procurement	_____ points
5.	Supply	_____ points
6.	System, Item, or Program Management	_____ points
7.	Transportation	_____ points

Total   100   points

COMMENTS: (continue on back if necessary)

Thank you for completing this survey. Please return it immediately to: Capt. Ralinda Gregor, AFIT/LSG (Bldg 641), Wright-Patterson AFB OH 45433-6583

Appendix F: <u>Weighting Survey Comments</u>

<u>General Comments</u>

Retired Air Force General
This product can be very useful to the Air Force of the future -- currently a senior loggie gets there more by accident than design. The LCCEP program can use your model and I recommend that they get a copy, or get me a copy and I will report it myself.

Retired Air Force General
Tough choice. I almost divided them [education and training, experience, and professional attributes] equally.

Active Duty General
Weights assigned are my initial reaction to relative importance. Those rated "most" or "least" are fairly clear in my mind. The great "middle" is not so certain.

Retired Air Force General
I place heavy emphasis on experience, common sense, initiative, and mobility. Some of the items listed under professional attributes/qualities are inter-related. Senior civilian logisticians have to be mirror images of what is required of general officers, i.e. dedication, loyalty, selflessness, and professional dedication. Unfortunately they are too often civilian first and service dedicated second. Mobility is key, as well as job experience, and the two are inseparable. Attitude of the organization in establishing a sense of importance to senior civilians is a must. If not treated with proper respect, no one will strive to achieve the rank. In AFLC continuity is normally associated to the senior civilian, however, 35 years in one place is no good either. Move the civilians like general officers. Don't establish a program to develop gurus!

Active Duty Air Force Colonel
Excellent effort. It has been a challenge to put points against the model.

Retired Air Force General
Our senior civilian leaders need to have broad experience, a solid educational background in a technical discipline, and abilities to relate these talents to current problems. In the wholesale arena they should have served at both the ALCs and the headquarters AFLC. Some service in Washington, D.C. might replace this requirement or substitute for it. They certainly need to be mobile. We need the good ones' talents, frequently at some headquarters where the computer institutions reside. We have elected not

to make so many changes. They need to be good problem
solvers and planners and understand the budget cycle well.
Contract experience helps.

Experience

Retired Air Force General
A senior logistician gets there by experience in
several of the disciplines. Rotation through these as we
grow up is essential. Should have system management
exposure/experience plus one tour with the using commands.
Exposure to the retail arena is very essential so that the
wholesale side can appreciate the world of the combat unit
GI.

Academician
Mobility: if one needs a varied background and gets it
without leaving, I don't see where being in a different
location would help. Maybe being at headquarters level!

Academician
[Acquisition logistics] covers many of areas listed
below [other assignments in logistics].

Retired Senior Civilian Logistician
I do not agree with the groupings on your model. Your
"experience" column reflects only assignments. The true
experience elements tend to appear under competency and
skills. The point spread above is based on your model. I
consider experience, properly defined, as the most
important.

Education and Training

Active Duty Air Force General
[PME should be] logistics PME.

Active Duty Air Force General
[Masters degree] in logistics.

Academician
[PCE is] usually fun -- get out of routine -- a reward.
Little improvement or rigor for logistician.

Academician
I feel strongly that the following degrees, in order of
importance, be given more points -- more weight than non-
technical degree: 1) logistics, 2) any engineering degree,
3) specific management (i.e. finance, marketing), 4) general
business. With masters degrees the following in order of

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importance: 1) master of science in logistics, 2) M.S. engineering, 3) M.B.A. with a thesis or a technical major, 4) other M.S. degrees, 5) other M.A. degrees. However I would give number one consideration with extra credit for an AFIT M.S. degree in Logistics or Naval Post Graduate Degree (Monterey). I would give more credit to courses taken in residence vis-a-vis correspondence.

If they don't have: [bachelors degree] don't hire, [masters degree] don't promote beyond GS-14.

Professional Attributes

Retired Air Force General
This category [professional involvement] not really essential.

Retired Air Force General
I like your model and have taken the liberty of keeping it. My only criticism of the model is some redundancy (my opinion) within and between personal qualities and professional skills.

Active Duty Air Force General
Understands all [logistics functional areas], master of none.

Active Duty Air Force General
The senior civilian loggies I have worked with are a critical "facilitator" for we "short-term" blue-suiters. Too much technical competence can lead to "micro-management." The most effective senior civilians with whom I have worked are managers and leaders first. They were able to work with people -- especially civilians -- to maximize the output of that workforce. Their technical capability was not as critical. I could always find that skill somewhere in the organization. It does not have to be at the top. Leadership/management does.

Retired General
As regards personal qualities and characteristics, if you have 4, 5, and 6 [initiative, integrity, and leadership], 1, 2, 3, and 7 [common sense, communication, dedication, and management] are included within any known definition of leadership.

Retired General
If you understand and are competent in number 6 [system, item, and program management] them you must understand 4,5, and 7 [procurement, supply, and transportation].

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Retired General
This one is difficult because some definitions of one [personal qualities and characteristics] tend to include the others.

Retired General
Weights, in some cases, should be reallocated when uses reference specific logistics positions! For instance, if the last, technical competence, were to cover the position of a maintenance engineer, engineering and maintenance/supply would be heavier, procurement less. If logistics plans and program management were combined into integrated logistics support it would have been easier to weight.

Active Duty Air Force Colonel
This is hard. One [personal quality and characteristic] is almost equal to any other. You can't function unless <u>all</u> are present in full measure!

Active Duty Air Force Colonel
Communication skills are fundamental in the complex, multi-functional business of logistics management. Ability to speak on technical topics clearly and to the point is essential. Analysis of problems from a strong technical base and varied experiences results in an effective logistics manager. Understanding the politics of organizations determines the degree of success one will have. Often, logistics must be resolved in the context of customer operations and manpower limitations within the supporting organization and the limitations of accurate data from field and depot/contractor sources. Skills in understanding these relationships, directing the formulation of possible solutions, and gaining management acceptance are vital to the success of senior logisticians as well as journeymen, middle managers and first level supervisors.

Active Duty Air Force Colonel
Too many in this category [personal qualities and characteristics]. Several of these are "stand alone" and deserve 100 points each.

Active Duty Air Force Colonel
Don't have much faith in these things [professional involvement in logistics societies] -- too much fluff.

Academician
Professional attributes are difficult to measure, and therefore should be weighted less -- also most controversial and more difficult to teach (research today tends to place these in the heredity category)! However, they are important and should be included.

Academician

[Communication is] one of most important of all. [Initiative, integrity, leadership, and management are] duplication with professional attributes. One integrity mistake should totally eliminate from further advancement. One has it or not -- no scale of 1 to 10. This section will get you into trouble as to observability except communication! I would get rid of most of these or move them to professional attributes.

Retired Senior Civilian Logistician

I mark this [professional involvement in a logistics organization] zero, as a senior member of SOLE, a CPL, and having been a member of several others.

Senior Civilian Logistician

[Dedication, initiative, and integrity are] inherent [in leadership and management].

Appendix G: <u>Validation Survey</u>

Mr. Thomas R. Harruff   1 July 1988
AFALC/OAP
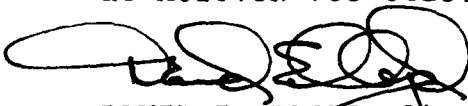Wright-Patterson AFB, OH 45433

Dear Mr. Harruff:

Logistics is receiving more attention as shrinking defense budgets force the services to manage their resources carefully. Future logisticians will be faced with several challenges that will test their abilities. To help define what is required of professional senior logisticians, you have been selected to participate in a survey to determine what makes a senior logistician successful.

Your insights and honest opinions are vital to the success of this AFIT thesis research. The results of this study will provide valuable insight about the role and contributions of the senior civilian logistician.

This survey should only take 30 minutes of your time. I would appreciate it if you could complete the survey and return it in the enclosed envelope within one week. Your responses will remain anonymous and will be reported only as aggregate data. Therefore, please answer each question honestly. Your participation is strictly voluntary, but I would greatly appreciate your assistance in this research effort.

If you have any questions about this project, please call me at AUTOVON 785-5023. Thank you for helping.

DAVID E. LLOYD, Lt Col, USAF   Atchs
Director   1. Questionnaire
Graduate Logistics Management Program   2. Return Envelope
School of Systems and Logistics

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STRENGTH THROUGH KNOWLEDGE

AIR FORCE SENIOR CIVILIAN LOGISTICIAN SURVEY

The purpose of this survey is to determine the characteristics, qualities, and background of current Air Force senior civilian logisticians. The results obtained from this survey will be used to explain what makes a civilian logistician successful. Your inputs will be valuable to the career development of future senior civilian logisticians.

Some questions require you to rate your capabilities. It is very important that you do this honestly. Please be assured that your responses will remain anonymous. Only aggregate data will be reported.

Some questions require you to specify whether experience or training was obtained during prior military service or during your civil service career. This is so the researcher can obtain an accurate picture of your civil service experiences. For questions where no such specification is made, you should answer based on all your experience.

Please mark your answers on this questionnaire. If you have any questions while you are completing this survey, do not hesitate to call Capt Ralinda Gregor at AFIT, AV 785-5023, or at home, (513) 293-3189.

1. What is your current job series?

   a. 345   g. 2003
   b. 346   h. 2010
   c. 801   i. 2101
   d. 1101   j. 2130
   e. 1601   k. 2150
   f. 1910   l. Other _____

2. Do you have prior military service?

   a. Yes
   b. No

3. How many years of prior military service do you have?

   a. 5 or less
   b. 6 to 10
   c. 11 to 15
   d. 16 to 20
   e. 21 or more
   f. I DO NOT have prior military service.

The next section of this survey asks questions about your experience. Some definitions are in order. Combat logistics includes actual wartime experience as well as combat planning and combat exercises such as REFORGER or Red Flag. Retail logistics includes only base level logistics plans, maintenance, procurement, supply, or transportation. Item manager experience is defined as wholesale logistics, not retail logistics. Program management refers to weapons system acquisition or follow-on logistics support.

4. In which of the following logistics disciplines have you had assignments? (please mark all that apply)

a. Acquisition Logistics
b. International Logistics
c. Combat Logistics
d. Retail Logistics
e. Wholesale Logistics

5. Where did you obtain your experience in acquisition logistics? (please mark all that apply)

a. Program management in AFLC
b. Program management in AFSC
c. Program management in other MAJCOM or SOA
d. Defense Logistics Agency
e. Air Force Plant Representative Office
f. Other (please specify) _____
g. I DO NOT have acquisition logistics experience

6. Where did you obtain your experience in international logistics? (please mark all that apply)

a. International Logistics Center
b. Air Logistics Center
c. Security Assistance Office
d. Program management in AFSC
e. Other (please specify) _____
f. I DO NOT have international logistics experience

7. Where did you obtain your experience in combat logistics? (please mark all that apply)

a. Actual wartime experience (please specify)
_____
b. Combat exercise planning or participation (please specify) _____
c. Mobility planning
d. Logistics Operations Center
e. Other (please specify) _____
f. I DO NOT have combat logistics experience.

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8. Where did you obtain your experience in retail logistics? (please mark **all** that apply)

    a. Base level logistics plans
    b. Base level maintenance
    c. Base level procurement
    d. Base level supply
    e. Base level transportation
    f. Other (please specify) _____
    g. I DO NOT have retail logistics experience.

9. Where did you obtain your experience in wholesale logistics? (please mark **all** that apply)

    a. Air Logistics Center
    b. AFLC Headquarters
    c. Defense Logistics Agency
    d. General Services Administration
    e. Other (please specify) _____
    f. I DO NOT have wholesale logistics experience

10. Have you ever had an assignment in an operational command?

    a. Yes, as a civilian (please specify commands)
       _____
    b. Yes, during prior military experience (please specify commands) _____
    c. No

11. How many management/supervisory positions have you held?

    a. One
    b. Two
    c. Three
    d. Four or more
    e. None

12. At what levels have you held staff positions? (please mark **all** that apply)

    a. Branch
    b. Division
    c. Directorate
    d. Headquarters (MAJCOM)
    e. Headquarters (USAF, SAF)
    f. Other (please specify) _____
    g. I HAVE NOT held a staff position

13. What percentage of your experience in management/ supervisory and staff positions was in logistics? _____ %

14. How many times have you moved during your Air Force
Civil Service career?

    a. One
    b. Two
    c. Three
    d. Four or more
    e. I HAVE NOT moved

       The next section asks questions about your education and training.

15. Do you have a Bachelors degree?

    a. Yes (please specify major) _____
    b. No

16. Do you have a Masters degree?

    a. Yes (please specify major) _____
    b. No

17. Have you taken any Professional Continuing Education (PCE) courses? (please mark all that apply)

    a. Yes - at AFIT
    b. Yes - at civilian institutions
    c. No

18. Which of the following Professional Military Education (PME) courses have you completed? (please mark all that apply and specify "C" for courses you completed during your civil service career and "M" for courses you completed in the military)

    a. _____ Squadron Officers School

    b. _____ Air Command and Staff College (or equivalent)

    c. _____ Industrial College of the Armed Forces

    d. _____ Defense Systems Management Course

    e. _____ Air War College (or equivalent)

    f. _____ Other (please specify) _____

    g. _____ I HAVE NOT completed any PME courses

The next section asks questions about the professional qualities and characteristics you possess.

19. Which of the following statements describes your involvement in professional logistics organizations such as SOLE, NCMA, or Council of Logistics Management? (please mark all that apply)

    a. I am a member of a professional logistics organization.
    b. I am an active member of a professional logistics organization (attend most meetings and functions).
    c. I have attended conferences or symposia sponsored by professional logistics organizations.
    d. I have been a presenter, moderator, or panel leader at a conference or symposium sponsored by a professional logistics organization
    e. I DO NOT belong to any professional logistics organizations.

20. My level of technical competence in engineering is: (if you are highly competent in one engineering discipline you should mark "highly competent.")

1	2	3	4	5
Not Competent		Fairly Competent		Highly Competent

21. My level of technical competence in logistics plans is:

1	2	3	4	5
Not Competent		Fairly Competent		Highly Competent

22. My level of technical competence in maintenance is:

1	2	3	4	5
Not Competent		Fairly Competent		Highly Competent

23. My level of technical competence in procurement is:

1	2.	3	4	5
Not Competent		Fairly Competent		Highly Competent

24. My level of technical competence in supply is:

1	2	3	4	5
Not Competent		Fairly Competent		Highly Competent

25. My level of technical competence in system, item, or program management is:
(If you are highly competent in system or item or program management you should mark "highly competent.")

1	2	3	4	5
Not Competent		Fairly Competent		Highly Competent

26. My level of technical competence in transportation is:

1	2	3	4	5
Not Competent		Fairly Competent		Highly Competent

Prior research has suggested several personal qualities and professional skills are desirable in a senior logistician. The next two questions ask you to assess the level to which you personally possess these qualities and skills.

27. Given 100 points, please allocate them among the personal qualities listed below based on the relative degree to which you possess these characteristics. You may use zeros if appropriate.

Common Sense	_____
Communication	_____
Dedication	_____
Initiative	_____
Integrity	_____
Leadership	_____
Management	_____
Other _____	_____

                Total   = 100 points

28. Given 100 points, please allocate them among the following professional skills based on the _relative degree_ to which _you_ possess them. You may use zeros.

Analytical Techniques   _____

Job Knowledge   _____

Planning Ability   _____

Problem Solving/Systems Viewpoint   _____

Resourcing Ability (Programming,   _____
Budgeting, Allocating)

Thorough Staff Work   _____

Other (specify) _____ _____

Other (specify) _____ _____

                Total   = 100 points

29. Which of the following has contributed _most_ to your success as a senior logistician? (please select only one)

    a. Education or Training
    b. Experience
    c. Professional Qualities

Please explain _____

_____

_____

_____

30. If you were promoted to another position and had to select a replacement for your current job, which of the following would you look for in that person?

    a. Breadth of experience in several areas of logistics would be most important.
    b. Depth of experience in a particular area of logistics would be most important.

The following questions solicit your opinion on several subjects related to senior civilian logistician career development. Please indicate how much you agree or disagree with each statement.

31. Senior civilian logisticians should have had management and supervisory experience.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

32. It is important for senior civilian logisticians to have had management and supervisory experience at several different organizational levels.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

33. Senior civilian logisticians should have had staff experience.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

34. Civilian logisticians should be multidisciplined: that is, experienced in more than one logistics discipline.
(The logistics disciplines are acquisition, combat, international, retail, and wholesale logistics.)

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

35. The mobility attitude and mobility history of a logistician should be factors in the selection of senior civilian logisticians.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

36. Senior civilian logisticians should be geographically mobile.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

37. Senior civilian logisticians should possess a masters degree.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

38. Professional Continuing Education (PCE) is important to civilian logistician development.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

39. Professional Military Education (PME) is important to the professional development of a senior civilian logistician.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

40. Involvement in professional logistics organizations is important to civilian logistician development.

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

41. Civilian logisticians aspiring to senior positions should have technical experience in more than one logistics functional area (engineering, logistics plans, maintenance, procurement, supply, transportation, and system, item, or program management).

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

42. Given a total of 100 points, please allocate them among the following personal qualities based on their relative importance to the ideal senior civilian logistician. You may use zeros.

Common Sense _____

Communication _____

Dedication _____

Initiative _____

Integrity _____

Leadership _____

Management _____

Other _____ _____

Total 100

42. Given a total of 100 points, please allocate them among the following professional skills based on their relative importance to the ideal senior civilian logistician. You may use zeros.

Analytical Techniques _____

Job Knowledge _____

Planning Ability _____

Problem Solving/Systems Viewpoint _____

Resourcing Ability (Programming, _____
Budgeting, Allocating)

Thorough Staff Work _____

Other (specify) _____ _____

Other (specify) _____ _____

Total 100

Do you have any comments to add? _____

_____

_____

_____

_____

_____

_____

_____

Thank you for completing this survey and contributing to the success of this study. Please return this questionnaire in the self-addressed envelope provided. Please mail it today.

If you would like an executive summary of the results of this study, please enclose a separate sheet of paper with your name and address. Again, your individual answers will be kept confidential and will only be reported as aggregate data.

Appendix H: Validation Survey Comments

Question 29

All three are important. Without the education the initial job would not have been available. The experience (OJT) is where technical competence was developed and professional qualities were polished.

#29 was difficult. Without professional qualities experience cannot be used to advantage. Professional qualities with experience is a hollow base. They play together.

Education and Training:

Don't want to overemphasize education, but the education and training allowed analysis of problems and factors involved, then, based on experience and qualities, to shape solutions and communicate/sell answers.

Education opens a lot of doors in the government but the other two qualities are also required to be successful.

Senior managers have always supported my efforts for educational development and allowed me to demonstrate my abilities.

The education has given me a basic understanding of most technical problems.

You have to have a baseline established in order to enhance your experience and develop leadership skills. Education and training provide an improved or elevated baseline.

The engineering and graduate logistics training is invaluable in developing the analytical techniques to problem solving. A great deal of our daily effort in logistics is solving problems, rather than managing. Emphasis should be in managing to prevent problems.

Few people understand how the total picture ties together. A good education in engineering coupled with years of insight into logistics is a must. The education must come before the experience.

Todays senior logistician must serve as his own technical director as systems/item complexity have increased, while making experience somewhat obsolete quicker.

I had a wealth of successful experiences, job knowledge and management skills. Only after I earned my masters degree did doors open for me.

Experience:

Education provides a basis upon which to build capabilities. Experience, however, and the ability to learn from it, is the most important aspect in allowing for effective performance and management.

Education originally got me hired but experience and risk taking have furthered and brought out what I consider to be my professional qualities.

To me, professional qualities are acquired from education -- but there is no substitute for experience, i.e. to deal with actual real world rather than theoretical problems -- until you have been there, you really don't know what it is really like.

I've held many jobs. I have been aggressive in learning what is going on around me -- not necessarily related to my responsibility. This has enabled me to better understand the whys of the job.

All you need is common sense and a little experience.

Experience provided the foundation to exploit my innate/developed/acquired abilities. Experience has added the ability to choose courses of action and make qualitative judgments.

I have worked in many different logistics functions.

Having gained experience in all major core wholesale logistics functions (at both staff and line/operating levels) has given me a great opportunity to understand the interrelationship and interdependencies of the "logistics world." This knowledge has been of great benefit in effectively performing my duties.

Broad range of assignments within the logistics community has given me insight into organization/process relationships and provided the larger view of issues/future trends.

My career plan was to work as many different logistics jobs as needed to be confident in meeting organizational objectives.

I believe experience has been the most important aspect in job success, but, without education I doubt that I would have been offered the opportunity for acquiring the diverse experience acquired.

I have been in supply, material management, plans and programs, and maintenance positions prior to my current acquisition logistics position. Breadth of experience contributed.

Assignments in 5 different MAJCOMs, with jobs ranging from flightline maintenance to HQ AFLC Deputy Director, plus continued active Reserve career.

Because logistics and management are personal disciplines, i.e., little of value is written, you gain it only a day at a time. Most of the written word is trivial.

Experience includes item a [education and training].

Experience has placed into practice those theoretical issues learned during education and training. Brings out the real world.

I have a great deal of experience in many logistics areas.

No substitute for being there.

While I received my masters degree in logistics management from AFIT and consider it extremely important, I believe the six years of practical experience I received in the item management division better prepared me for a senior logistics position. As a GM-346-15, in system program management, approximately 50% of my problems were item management problems, and I had to speak their language.

My promotions have been due primarily to the fact that I have demonstrated an ability to handle and motivate people; identify, analyze and resolve problems in a variety of circumstances. The key is the ability to get the most from others.

Multi-functional experience in Maintenance and Material Management has broadened my overall knowledge and abilities.

Taking advantage of learning opportunities and pursuing details for the programs I was managing, then taking the initiative to find solutions and improve policy have paid big dividends.

I have had assignments at all levels of the logistics spectrum from apprentice to senior electronics mechanic from trainee to section, branch, and division in two directorates.

(Do not understand item c.) There is no substitute for experience -- academe and the "real world" are not the same. Theory vs. reality must be fully understood.

A strong association of involvement and leadership in successful programs and a long term role of team and organizational people leadership/development programs.

Chosen to lead teams in the accomplishment of a task. This involved people from a wide number of disciplines.

Education, an area which I'm short, is extremely important -- but alone cannot be a success. Professional qualities are similar to education. However, experience -- in the absence of the other two -- provides some degree of success. The inverse is not true.

Experience in item management, production management, plans and programs, and in preparing/presenting various courses regarding logistics management activities.

Pragmatic use of education and training.

I have a liberal arts education, thus not contributing directly to current success or professional training. The experience, complemented by my generally broad education and training is the major contributor to my "success."

Professional qualities are largely the result of education, but they only provide ability once they have been used in real life situations. There is no substitute for actual experience.

My broad experience base, along with my education and training, have contributed most to my success as a manager. The professional qualities that I possess have been acquired through experience and training.

There is no substitute for job knowledge.

I have found that being willing to do the job at hand and actually going through all the growing pains involved in performing the tasks is the best way to learn an acquisition process.

Experience includes item "a" [education and training].

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Being mobile has helped significantly.

Being in the work environment provides a prospective of how and what needs to be accomplished to support the mission. Not having this experience, one would only do what he felt necessary from a limited view of the situation.

Experience by being exposed to many problems.

I've worked at 2 ALCs. That experience has shown me how they operate and what their focus is. I can then apply that to weapon system acquisition in the early stages. My professional qualities allow me to apply this experience effectively.

Air Force logistics is a unique business and requires actual experience to be proficient.

In converting education and training time to experiences, the experience time comes out ahead.

Given that there are basic educational and quality prerequisites to be able to perform, success is most likely the result of a wide range of experience in a variety of functional areas and types of jobs within those areas.

I have held various jobs in maintenance: engineering, planning, program management/analyst, section/branch/ division chief and I spent six months at the Washington D.C. Navy Yard working joint service issues.

Education got me in the door but hard work in a demanding environment (an aircraft division) gave me the "street smarts" to do well.

Not having to "reinvent." Being able to identify, project, locate subs, sources of supply -- know the system and how to work within and around it.

The relative degree to which one possesses professional qualities is dependent upon their experience in application of those qualities.

Practical experience has contributed to my personal knowledge of logistics to a greater extent than personal education.

My personal work experience in a number of functional areas at various levels of management has been the major contributor to my success. However, my personal characteristics and formal education have been significant contributing factors also.

<u>Professional Qualities</u>:

These are the basis of any trade. The others are useful, but qualities breed success.

Providing complete staff work and being able to present complex issues so that non-technical higher managers could comprehend for decision purposes.

Having the ability and applying it with results.

Credibility and loyalty. Above all you have to be trusted.

Tough question with only part of answers listed -- professional qualities are developed through an appropriate mix of education/training and experience. The degree of skill developed is dependent upon personal characteristics such as listed in number 27.

I believe reasonable intelligence combined with a positive attitude and exposed to challenging work assignments have gotten me where I am.

Education, training and experience only enhance and develop a person's basic leadership and management abilities. Without a basic personality structure involving those items in question 27, education, training and experience are futile efforts. No matter how hard you try, you can't make a giraffe into a hippopotamus.

This is pretty much a toss-up between b and c, but I'd give a slight edge to c. Experience, in my view, is still the best form of education. Even so, everyone possesses "experience" -- it's the professional qualities that spell the ultimate measure of success.

Education and training provide basic tools, experience gives background and specific knowledge, but if you don't possess the right professional qualities, you can't succeed.

Ability to deal with people; willing to work hard; plan, organize, control. Although experience is important, professional qualities make the difference.

First two elements are disparate to my current position. I am valued for my willingness to work, my ability to analyze problems, anticipate consequences, and discern relationships. My frankness is also valued.

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Set the tone and pace for an organization through leadership -- be sure to aim at the right target -- "mission support."

Successful because of ability to lead by example -- high standards, character, etc. Also ability to relate to employees -- to understand them, place them where they'll do the most good and where the AF can benefit most.

To me the term professional qualities encompasses education as well as experience, as well as other elements such as initiative, integrity, etc. -- all of which have contributed to success.

The ability to take a systems viewpoint, apply analytical techniques and do basic planning, coupled with common sense have contributed to my success. This has held true in many "first of a kind" or problem solving efforts.

Personal standards should drive you at work . . . they should hopefully exceed the job standards . . . when they don't you are in trouble or reached your level of incompetence.

The ability to analyze problems and resolve correct approaches to either technical or managerial problems and then communicate with all concerned has been of primary importance.

Includes communication skills and problem solving techniques.

Difficult choice -- however, without the professional qualities all the training and experience will be wasted.

Management skills/understanding how the funding/ manpower and personnel systems work.

The professional approach to logistics, i.e. approaching it as a discipline where one continually learns and where one applies analytical techniques in new and different ways has been the largest contributor to my success.

I've had numerous assignments which afforded opportunities to grow into the job. My professional outlook and discipline have enabled me to capitalize on those opportunities.

Education is abstract, training is patterning/specific, experience is relative and confining (because that's how we

do it). Value to the company derives from adaptability, dedication, and professional "reflexes."

If you're a professional you will seek/acquire the education, training and experience to understand your job and your role in the overall scheme of things.

Education/training and experience are somewhat "necessary conditions", along with professional qualities, for success as a senior logistician, but one must also possess professional qualities. The former opens doors.

The desire to do a good job for the guys in the field, initiative to take on the hard jobs, taking a positive attitude and not giving up easily has pushed me out in front of most of my peers.

Education, training, and experience are all vital to where I am now. They form the very base. But, without initiative, dedication, integrity, planning and executing, they are worth very little. How I deal with people and programs (attitude and initiative) are most important.

Ability to understand different issues, to keep open options, to keep ahead of available technology, to make changes, to solve problems (one way or another), to accept a position.
Professional qualities tend to require that you undertake the necessary education or training that is required to do your job. Experience certainly is important but integrity, loyalty, and dedication, attributes I consider part of professionalism, are more important.

I feel my professional qualities were obtained from my education (acquired mental discipline) and experience (scars on my aft rear side). It is difficult for me to separate the three, relative to their contributions to my level of success.

Actually, if I had a choice I would have picked personal qualities. If you have good leadership, management and common sense as well as the ability to learn quickly. Success is a matter of applying yourself.

There are many well educated managers who are not successful. There are successful managers who are not formally educated. The essence of a successful senior manager is the ability to gain and hold the respect of the management team. Gaining and holding the respect of a management team is not a simple task. To do that the manager must know when to listen and when to curtail debate and make a decision. Experience and training all come into

play, but unless the manager learns to make that decision correctly, he/she will not be successful.

I feel that the required professional qualities can go far if properly applied toward overcoming shortfalls in either education/training or experience.

An ability to perceive problems, preplan actions, and sell ideas to management. Lead workers in carrying out all functions.

The ability to perceive linkages between past experiences and current problems; the ability to develop and present ideas in understandable terms; trust by my peers and associates; and a "passion for logistics." I have always looked upon my career as a career, rather than as a job.

I believe I have been able to accomplish because I have done so through the management and interrelationship with people.

My desire to understand my current role, other folks' viewpoints, and a sense of teamwork have helped me move through many diverse jobs, setting high expectations and achieving difficult objectives through teamwork.

Being a professional logistician subsumes education, training, and experience.

I have risen above most of my peers (who are basically equally experienced and educated) because of my ability to analyze, make sound decisions, present ideas effectively, and other professional qualities.

My abilities to analyze and learn, communicate, apply what I know to the job at hand, manage and lead people have contributed most to my success. This has, however, been supported by a strong foundation of logistics experience.

I credit most of my success from being able to get the job done through leadership, integrity, dedication, and commitment to the USAF mission.

Mobility

Good survey. I have just completed my first career move in 20 years and it was good for me and the USAF. However, we must be careful in the USAF not to over-sell or overkill on requiring senior people to be mobile -- can cause serious disruption of personal life and be a <u>detractor</u> from performance.

At an ALC there is so much to learn you can gain a _wide_ background without moving.

The ideal manager is not one of a particular type but one who can and will sense the current needs and flex his style and methods to meet mission and organization needs. Breadth of experience and an open-minded approach are key; geographic mobility is incidental.

Each senior level position is unique in the individual requirements for the job. While education and mobility may be desirable goals, sometimes the critical element is proven performance of the individual. Mobility in the selection process is extremely important in order to match the best person to a particular job.

Not sure of the intent of "senior civilian logisticians should be multidisciplined", "technical experience in more than one logistics functional area." I believe that expertise in other areas is necessary, but can be gained without necessarily forcing a multi-disciplined career path.

Mobility is a touchy and situational issue. I don't believe in "playing the game" and filling squares. Logisticians should perform -- like any other red-blooded American. Performers get recognized -- promoted -- stroked -- and asked to move -- if it's the right time. Performers should also be allowed to stay put if that's their desire.

The current emphasis on mobility as an overriding criterion for promotion is wrong. Logisticians should be encouraged to be mobile because it will build a foundation which can improve their job performance and potential for advancement. Senior logisticians should be selected based on job performance and potential, not based on whether or not an individual is mobile. The current emphasis fosters mediocrity, because people who are not mobile are not competing for top jobs even if they are the best candidates.

Today, the first screen a person aspiring to be a senior logistician goes through is mobility. If a person is not mobile, they are not considered. Consequently, many highly qualified people are not even considered for promotion. I believe mobility should be the last screen applied. After the top candidates are identified, then the mobility screen could be applied. If none of the top candidates are mobile, select the top person. If some are mobile, select from among those who passed the mobility screen.

Reference mobility: Particularly in AFLC you can gain a _world_ of experience at one geographic location, so the

march around the globe is silly. In addition, the financial offsets enjoyed by the military have _not_ been built into the civilian system (housing allowances, etc.) and even a promotion rarely compensates for the loss and aggravation. The most successful organizations are those _with_ senior civilian continuity (this does _not_ mean functional narrowness or stagnation however).

Reference educational requirements: Again, we seem to be imposing a military academic standard (M.S. required) on a civilian system that does not subsidize obtaining such in the same way as for military. Moreover, we have some folks who are educated beyond their intelligence and yet the "system" considers them automatically "better" than others who may not have the specific degree, but have _pertinent_ education, training, experience and managerial acumen. We need to be sure we don't substitute a records check for managerial judgment.

A senior logistician needs as broad an experience base as possible to function effectively. While geographic mobility may help achieve broadened experience, I feel it is wrong to make mobility (geographic) a prerequisite to advancement. Much can be said for _functional_ mobility at one location. Further, a senior logistician can _lose_ effectively if he or she is moved to a different geographical location and runs afoul of the "corporate culture" at the new location (what works at one base/ALC/etc. may not work at another). Finally, financial remuneration is lousy! More often than not, one loses financially in a move. Family considerations and the fact that civilian experience can provide stability and long term class/corporate knowledge to the organization while being _functionally_ mobile.

You can become multidisciplined without changing location of employment -- just move at the same site to different jobs.

I think that multi-function, discipline, and level experience is important to a senior civilian. However I don't agree that recent or current mobility should be mandatory for selection to the SES. Desirable but not mandatory.

I do not agree that mobility agreements are necessary to achieve top logistic positions. Situations and personal conditions change and mobility could be detrimental to one's career and job performance.

Within AFLC, the historical position was that civilians provided stability and continuity, i.e., depth of experience, and that military were mobile, i.e., breadth of

experience. Civilians knew why things were done. Military brought new perspectives and viewpoints. IT worked well. The command was successful. A few years ago it was decided that civilians should emulate military and move frequently. The result has been a shallow work force unable to master the intricacies of our complicated disciplines. People are constantly on the move and thinking about the rewards that come from their next jobs, not from what they are doing now. This lack of dedication to the job at hand shows in poor performance and customer support.

At some point in time the AF must look at the role of civilian logisticians in relation to how they are developed. With few exceptions, AF civilians serve as deputies to the military leadership. If we continue on our present course towards civilian "generalists" who are highly mobile, we run the very real risk of a military/civilian structure where neither group knows the details. All the real knowledge will be at the lower levels. Logistics is a diverse, complex field. I am not sure it can afford mobile generalists at the top for both the military and civilian population.

May have been helpful to define "mobility." There is geographical and in-place mobility.

Many issues are not black and white but objective answers were required. Mobility should "be considered" but shouldn't be an eliminating factor. Same for multi-discipline experience, masters degrees and PME.

Too much emphasis is being placed on geographic mobility of civilian logisticians. At the senior level one of our major contributions is to the community and congressional interface. Plus we are the corporate memory and continuity for the military. If we wanted to move, we would have joined the military for better benefits.

Other Comments

Question 30 cannot be an either/or situation.

Question 27 is extremely hard to limit to 100 points since I feel success in these positions requires giving "110%"! After reflecting on number 43 for a half hour, I decided I possess the ideal mix of characteristics.

Questions 42 and 43 do not lend themselves to easy array. Each element rated must be viewed on a situational basis. Circumstances drive the need to highlight either one, i.e. they are not mutually exclusive.

Questions 27 and 42 provided an interesting choice --
yet there was much overlap between the choices.

I think the relative weightings of personal qualities
and professional skills are difficult and provide little
information. Senior civilian logisticians cannot afford a
relative weak spot in any of these areas. This survey has
completely ignored information management as a part of
logistics management which is a serious deficiency in
identifying roles/contributions on logisticians.

I think integrity is important as is dedication, but
they are subsets of leadership and common sense.

All of the above traits [personal qualities] are
equally important and relative to each other as so far as
being a good logistics manager. However in my experience
the one factor that you must be willing to exercise in order
to apply all of the above is the willingness to accept
responsibility.

The key ingredient for success are like the ingredients
in an award winning cake. The proportions are different in
each award winning recipe and there is often a secret
ingredient. I don't believe there is an ideal balance
required among personal qualities, experience, education or
professional qualities. Often a lack of one ingredient is
more than compensated for by a little more of another.
Other times I think there must be a secret ingredient that
we haven't learned how to isolate.

Under questions, I include time as a resource to be
managed carefully -- we should not concentrate so much on
money, although many would say time _is_ money.

Beyond a certain age/experience the [masters] degree is
not relevant per se. Continuing education _is_ important.
[Technical experience] can be gained in several ways at
several levels. Nobody should try to be fully expert in all
areas. It takes 5-7 years to become truly competent
journeyman in a given area.

All-around experience required -- from squadron
flightline/back shops up through chief of maintenance/supply
to ALC to AFLC/AFSC to HQ USAF with further overseas
assignments at wing/depot (non-US) to include working with
allied forces.

In the situation of a senior civilian position, the
individual needs to have a long term commitment and be
accountable for the decisions made. If the term is short,
many of the decisions may appear good at the time but have

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destructive impacts on the organization at a future time and if moved may not realize that, therefore, any effort needs to be answerable to that individual.

Don't believe you are asking the right questions for what you are attempting to do, i.e. what I think you are trying to accomplish -- too broad and general.

Thanks for taking this task on. It is long overdue. You might expect that one with limited education would say experience was more important (like myself). On the other hand, one with limited experience will say education is most important. Well, I am convinced that my limited education is largely due to my station in life (out of poverty), yet my children got an education -- that's how strongly I feel about education. Also, we don't move folks around for education, we move them around to get experience as rapidly as possible. So, I'm for the experienced person with an education (proven performer), but if I can't have both -- give me the experienced person to teach the high potential individual with nothing but education.

If you seek the perfect "formula" for developing people, I don't think there is one. Equally effective senior people have come from a greatly diverse set of educational, professional quality, and experiential attributes. There is great benefit to the whole from the diversity of its members. The thought of cloning managers from a model thought to be perfect is scary, and would over time degrade the overall quality and effectiveness of our executives.

Regarding questions 31 through 41, my answers are based on what I think contributes to a fully competent senior logistician, not what it takes to be considered in today's "fill the square" approach to career development.

The principal factors that make a civilian logistician successful (if you define success as achieving a senior position) are likely the same as those in any field. The ability to resolve problems through organizations, i.e., ability to plan, organize, direct, and control the efforts of others, far outweighs other aspects of experience.

One should not try to put too tight a box around what makes a good logistician. I have seen a non-degreed individual become a top AFLC SES type loggie on common sense, integrity, etc. A wide and varied background can make a good loggie out of a person with the right qualities, but that person would probably be successful regardless of his/her occupation.

After 30 years plus of experience in this racket I sincerely believe that your attitude that reflects the willingness to "work" is the basic building block necessary to become an acquisition manager. This one trait will insure, generally speaking, that you will apply the proper attributes necessary to do the job.

There is a definite need for our senior logisticians to know and understand how the allocation of resources/programming of resources works and apply that knowledge with a lot of common sense to accomplish our tasks. They also need to have strong convictions and heavy input into the acquisition programs to assure logistics requirements are provided for up front, then incorporate a firm production baseline into the logistics system early on in the acquisition process. We then must find a reasonable way to implement resources provided in a more timely manner to get full advantage of funding provided.

The military and civilian managers progress through two separate paths and have totally different needs. The civilian must know the technical aspects of things, the military must move much and command.

Senior civilian logisticians should be trained/educated/focused to become generalists as opposed to specialists.
Senior civilian logisticians should be encouraged to complete ACSC and Air War College prior to attaining senior status.

I have found that as I progressed into management level positions, it became more difficult to maintain "technical" currency. Seminars (2-3 days) and periodic intensive training (2-4 weeks) in technical skills would be very useful to senior "managers."

Logistics field is the most challenging and dynamic, crossing all arenas -- maintenance, supply, manpower, budget, personnel, acquisition, procurement, standardization, planning and programming. Never a dull moment. Every day in every way -- it is an exciting way of life. Keeps one's mind active and extremely alert and time flees by at an accelerated pace. Even though a stressful career field, it has many rewards and personal satisfaction, particularly in the maintenance area -- immediately see results of your personal efforts.

There is a lack of definition of "senior civilian logistician." It is not clear what your perception of a "senior logistician" is. It is my contention that he/she is more of a manager of people than a manager of things. Your

survey leans (my perception) to a manager of things. Your emphasis on military experience is also overly emphasized. Most military training/experience is not adequate for "senior logisticians."

I think that the logistician of the future will be required to be more technically qualified than they have been in the past.

Suggest that future studies address the subject of career counseling and "mentoring" on development of senior logisticians -- both from the personal or perceived actual experience perspective and the perceived ideal.

Added Personal Qualities

    Attention to detail
    Guts to tell what you think
    Innovation
    Job expertise
    Like people
    Loyalty
    Memory retention level
    Motivator
    Patience
    Sensitivity to peoples' needs
    Tenacity
    Vision
    Work ethic

Added Professional Skills

    Arbitration ability
    Communications
    Dealing with people
    Decision making
    Enthusiasm
    Follow-up
    Getting along -- team work
    Goal orientation
    Handling people
    Interpersonal relations
    Mediation ability
    Patience
    Personnel relations
    Project completion
    Results-oriented
    Teaching/training

```
Set Width=80
Title 'Senior Civilian Logisticians'
File Handle data/Name='data'
Data List File=data NOTABLE Records=3/
  1 ID 1-3 Majcom 5 Base 6-7 JobSer 9-12 MilSer 14
  AcqLog 16 IntLog 18 ComLog 20 RetLog 22 WhoLog 24
  OpCom 26 MgtSup 28 StaffEx 30 PctLog 31-33 Mobile
  35 BachDeg 37 MasDeg 39 PCE 41 PME 43 PLOmem 45
  PLOatt 47 PLOpart 49 TcEng 51 TcLogP 53 TcMx 55
  TcProc 57 TcSupp 59 TcSysM 61 TcTran 63 ComSen
  64-66 Commun 67-69 Dedic 70-72 Init
  73-75 Integ 76-78/
  2 Ldr 1-3 Mgt 4-6 OthQ 7-9 Analyt 10-12 JobKno
  13-15 PlanAb 16-18 ProbSo 19-21 Resour 22-24 StfWk
  25-27 OthS 28-30 LDim 31 LSpGen 33 LMgtExp 35
  LMgLev 37 LStfEx 39 LMulti 41 LMobAt 43 LGMob 45
  LMastr 47 LPCE 49 LPME 51 LPLO 53 LTechEx 55
  LComSen 56-58 LCommun 59-61 LDedic 62-64
  LInit 65-67 LInteg 68-70 LLdr 71-73 LMgt 74-76
  LOthQ 77-79/
  3 LAnalyt 1-3 LJobKno 4-6 LPlanAb 7-9 LProbSo
  10-12 LResour 13-15 LStfWk 16-18 LOthS 19-21
Value Labels
  Majcom 1 'AFLC' 2 'AFSC' 3 'USAF' 4 'Using Command' 5
    'Separate Operating Agency'/
  Base 1 'WrightPat' 2 'Kelly' 3 'Tinker' 4 'Hill' 5
    'McClellan' 6 'Robins' 7 'Pentagon' 8 'Andrews' 9
    'LA' 10 'Norton' 11 'Eglin' 12 'Scott' 13
    'APO SF' 14 'Newark' 15 'Hickam' 16 'Gunter'/
  MilSer 1 'no prior service' 2 '5 or less' 3 '6 to 10'
    4 '11 to 15' 5 '16 to 20' 6 '21 or more'/
  AcqLog 1 'Acquisition logistics experience'/
  IntLog 1 'International logistics experience'/
  ComLog 1 'Combat logistics experience'/
  RetLog 1 'Retail logistics experience'/
  WhoLog 1 'Wholesale logistics experience'/
  OpCom 1 'Assignment in an operational command'/
  MgtSup 1 'Management Supervisory experience'/
  StaffEx 1 'branch' 2 'division' 3 'directorate' 4
    'MAJCOM HQ' 5 'USAF HQ' 6 'other' 7 'none'/
  Mobile 1 'one move' 2 'two moves' 3 'three moves'
    4 'four or more moves' 5 'none'/
  BachDeg 1 'bachelors degree'/
  MasDeg 1 'masters degree'/
  PCE 1 'PCE at AFIT' 2 'PCE at Civilian Institute'
    3 'both' 4 'none'/
  PME 1 'PME'/
  PLOmem 1 'active member'/
  PLOatt 1 'attended conference or symposia'/
  PLOpart 1 'presenter, moderator, panel leader'/
  TcEng to TcTran 1 'not competent' 2 'level 2' 3
    'fairly competent' 4 'level 4' 5
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        'highly competent'/
    LDim 1 'education and training' 2 'experience'
      3 'professional qualities'/
    LSpGen 1 'generalist' 2 'specialist'/
    LMgtExp to LTechEx 1 'highly disagree' 2 'disagree' 3
      'neither agree nor disagree' 4 'agree' 5
      'highly agree'/
Variable Labels
    ID 'respondent number' JobSer 'Job Series'
    PctLog 'Percent of Logistics Mgt and Staff Exp'
    ComSen 'common sense' LComSen 'ideal common sense'
    Commun 'communication' LCommun 'ideal communication'
    Dedic 'dedication' LDedic 'ideal dedication'
    Init 'initiative' LInit 'ideal initiative'
    Integ 'integrity' LInteg 'ideal integrity'
    Ldr 'leadership' LLdr 'ideal leadership'
    Mgt 'management'  LMgt 'ideal management'
    OthQ 'other quality' LOthQ 'ideal other quality'
    Analyt 'analytical techniques' LAnalyt
      'ideal analytical techniques'
    JobKno 'job knowledge'  LJobKno 'ideal job knowledge'
    PlanAb 'planning ability' LPlanAb
      'ideal planning ability'
    ProbSo 'problem solving systems viewpoint' LProbSo
      'ideal problem solving'
    Resour 'resourcing ability' LResour
      'ideal resourcing ability'
    StfWk 'thorough staff work' LStfWk 'ideal staff work'
    OthS 'other skill' LOthS 'ideal other skill'
    LMgtExp 'mgt supv experience' LMgLev
      'mgt supv at several levels'
    LStfEx 'staff experience' LMulti 'multidisciplined'
    LMobAt 'attitude and history for selection'
    LGMob 'geographically mobile'
    LMastr 'masters degree' LPCE 'PCE important' LPME
      'PME important'
    LPLO 'professional log orgn important'
    LTechEx 'tech experience in more than one area'
Sort cases by ID
DO IF (AcqLog EQ 1)
COMPUTE ACQSCO=3.8
ELSE
COMPUTE ACQSCO=0
END IF
DO IF (IntLog EQ 1)
COMPUTE INTLOGSC=1.6
ELSE
COMPUTE INTLOGSC=0
END IF
DO IF (ComLog EQ 1)
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COMPUTE COMLOGSC=2.3
ELSE
COMPUTE COMLOGSC=0
END IF
DO IF (RetLog EQ 1)
COMPUTE RETSCO=2.6
ELSE
COMPUTE RETSCO=0
END IF
DO IF (WhoLog EQ 1)
COMPUTE WHOLSCO=5.2
ELSE
COMPUTE WHOLSCO=0
END IF
DO IF (OpCom EQ 1)
COMPUTE OPCOMSCO=3.4
ELSE
COMPUTE OPCOMSCO=0
END IF
DO IF (WhoLog EQ 1 AND (RetLog + ComLog + AcqLog
  + IntLog GE 1))
COMPUTE ASSLOGSC = OPCOMSCO + 15.5
ELSE
COMPUTE ASSLOGSC = OPCOMSCO + WHOLSCO + RETSCO + COMLOGSC
  + ACQSCO + INTLOGSC
END IF
DO IF (MgtSup EQ 1 AND PctLog GE 70)
COMPUTE MGTSCO=8.7
ELSE
COMPUTE MGTSCO=0
END IF
DO IF (StaffEx GE 2 AND StaffEx LE 6 AND PctLog GE 70)
COMPUTE STAFFSCO=5.1
ELSE
COMPUTE STAFFSCO=0
END IF
COMPUTE ADVPOSCO = MGTSCO + STAFFSCO
DO IF (Mobile GE 2 AND Mobile LE 4)
COMPUTE MOBSCO=7.3
ELSE
COMPUTE MOBSCO=0
END IF
COMPUTE EXPERSCO = MOBSCO + ADVPOSCO + ASSLOGSC

DO IF (BachDeg EQ 1)
COMPUTE BACHSCO=6.8
ELSE
COMPUTE BACHSCO=0
END IF
DO IF (MasDeg EQ 1)
```

```
COMPUTE MASTSCO=5.2
ELSE
COMPUTE MASTSCO=0
END IF
DO IF (PME EQ 1)
COMPUTE PMESCO=4.7
ELSE
COMPUTE PMESCO=0
END IF
DO IF (PCE LE 3)
COMPUTE PCESCO=8.5
ELSE
COMPUTE PCESCO=0
END IF
COMPUTE ADVDEGSC = MASTSCO + BACHSCO
COMPUTE EDUCSCO = ADVDEGSC + PMESCO + PCESCO

DO IF (PLOmem EQ 1)
COMPUTE PLOMEMSC=1.7
ELSE
COMPUTE PLOMEMSC=0
END IF
DO IF (PLOatt EQ 1)
COMPUTE PLOATTSC=0.8
ELSE
COMPUTE PLOATTSC=0
END IF
DO IF (PLOpart EQ 1)
COMPUTE PLOPARSC=1.6
ELSE
COMPUTE PLOPARSC=0
END IF
COMPUTE PLOSCORE = PLOMEMSC + PLOATTSC + PLOPARSC
DO IF (TcEng GE 3)
COMPUTE TCENGSC=1.5
COMPUTE E=1
ELSE
COMPUTE TCENGSC=0
COMPUTE E=0
END IF
DO IF (TcLogP GE 3)
COMPUTE TCLOGSC=1.4
COMPUTE L=1
ELSE
COMPUTE TCLOGSC=0
COMPUTE L=0
END IF
DO IF (TcMx GE 3)
COMPUTE TCMXSC=1.7
COMPUTE M=1
```

```
ELSE
COMPUTE TCMXSC=0
COMPUTE M=0
END IF
DO IF (TcProc GE 3)
COMPUTE TCPROCSC=1.4
COMPUTE P=1
ELSE
COMPUTE TCPROCSC=0
COMPUTE P=0
END IF
DO IF (TcSupp GE 3)
COMPUTE TCSUPPSC=1.3
COMPUTE S=1
ELSE
COMPUTE TCSUPPSC=0
COMPUTE S=0
END IF
DO IF (TcSysM GE 3)
COMPUTE TCSYSMSC=2.6
ELSE
COMPUTE TCSYSMSC=0
END IF
DO IF (TcTran GE 3)
COMPUTE TCTRANSC=1.0
COMPUTE T=1
ELSE
COMPUTE TCTRANSC=0
COMPUTE T=0
END IF
DO IF (TcSysM GE 3 AND (T + M + S + P + L + E GE 2))
COMPUTE TCSCORE=10.9
ELSE
COMPUTE TCSCORE = TCTRANSC + TCSYSMSC + TCSUPPSC + TCPROCSC +
 TCMXSC + TCENGSC + TCLOGSC
END IF
DO IF (ComSen GE 16)
COMPUTE COMSENSC=1.4
ELSE
COMPUTE COMSENSC=0
END IF
DO IF (Commun GE 13)
COMPUTE COMMUNSC=1.8
ELSE
COMPUTE COMMUNSC=0
END IF
DO IF (Dedic GE 13)
COMPUTE DEDICSC=1.1
ELSE
COMPUTE DEDICSC=0
```

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```
END IF
DO IF (Init GE 13)
COMPUTE INITSC=1.5
ELSE
COMPUTE INITSC=0
END IF
DO IF (Integ GE 16)
COMPUTE INTEGSC=2.0
ELSE
COMPUTE INTEGSC=0
END IF
DO IF (Ldr GE 16)
COMPUTE LDRSC=2.4
ELSE
COMPUTE LDRSC=0
END IF
DO IF (Mgt GE 12)
COMPUTE MGTSC=1.3
ELSE
COMPUTE MGTSC=0
END IF
COMPUTE QUALSCO = COMSENSC + COMMUNSC + DEDICSC +
    INITSC + INTEGSC + LDRSC + MGTSC
DO IF (OthQ GE 1 AND QUALSCO LE 10.5)
COMPUTE TQUALSCO = QUALSCO + 1
ELSE IF (OthQ GE 1)
COMPUTE TQUALSCO=11.5
ELSE
COMPUTE TQUALSCO = QUALSCO
END IF
DO IF (Analyt GE 14)
COMPUTE ANALYTSC=1.1
ELSE
COMPUTE ANALYTSC=0
END IF
DO IF (JobKno GE 18)
COMPUTE JOBKNOSC=2.1
ELSE
COMPUTE JOBKNOSC=0
END IF
DO IF (PlanAb GE 16)
COMPUTE PLANABSC=1.3
ELSE
COMPUTE PLANABSC=0
END IF
DO IF (ProbSo GE 19)
COMPUTE PROBSOSC=1.7
ELSE
COMPUTE PROBSOSC=0
END IF
```

```
DO IF (Resour GE 16)
COMPUTE RESOURSC=1.3
ELSE
COMPUTE RESOURSC=0
END IF
DO IF (StfWk GE 14)
COMPUTE STFWKSC=1.0
ELSE
COMPUTE STFWKSC=0
END IF
COMPUTE SKILLSC = ANALYTSC + JOBKNOSC + PLANABSC +
   PROBSOSC + RESOURSC + STFWKSC
DO IF (OthS GE 1 AND SKILLSC LE 7.5)
COMPUTE TSKILLSC = SKILLSC + 1
ELSE IF (OthS GE 1)
COMPUTE TSKILLSC=8.5
ELSE
COMPUTE TSKILLSC=SKILLSC
END IF
COMPUTE PROFATSC = TSKILLSC + TQUALSCO + PLOSCORE + TCSCORE
COMPUTE MODELSC = PROFATSC + EDUCSCO + EXPERSCO
FILE HANDLE MODELINF/NAME='MODELINF'
XSAVE OUTFILE=MODELINF
EXECUTE
FINISH
```

```
Set Width=80
Title 'Senior Civilian Logisticians'
FILE HANDLE MODELINF/NAME='MODELINF'
GET FILE=MODELINF
COMPUTE MODELM=MODELSC-MOBSCO
COMPUTE EXPERSM=EXPERSCO-MOBSCO
CONDESCRIPTIVE MODELM EXPERSM
RECODE MOBSCO (0=1) (7.3=2)
RECODE LSpGen (1=3) (2=2)
DO IF (MODELM LE 64.1)
COMPUTE CHIMOD=1
ELSE
COMPUTE CHIMOD=2
END IF
DO IF (MODELSC LE 67.3)
COMPUTE CHIMODSG=1
ELSE
COMPUTE CHIMODSG=2
END IF
DO IF (EXPERSM LE 26.1)
COMPUTE CHIEXP=1
ELSE
COMPUTE CHIEXP=2
END IF
CROSSTABS VARIABLES=CHIMOD (1,2) MOBSCO (1,2)/
  TABLES=MOBSCO BY CHIMOD
STATISTICS 1 3
CROSSTABS VARIABLES=CHIMODSG (1,2) LSpGen (2,3)/
  TABLES=LSpGen BY CHIMODSG
STATISTICS 1 3
CROSSTABS VARIABLES=CHIEXP (1,2) MOBSCO (1,2)/
  TABLES=MOBSCO BY CHIEXP
STATISTICS 1 3
FINISH
CONDESCRIPTIVE ASSLOGSC ADVPOSCO EXPERSCO
   ADVDEGSC EDUCSCO
   PLOSCORE TCSCORE TQUALSCO TSKILLSC PROFATSC MODELSC
FINISH
```

```
Set Width=80
Title 'Senior Civilian Logisticians'
FILE HANDLE MODELINF/NAME='MODELINF'
GET FILE=MODELINF
SORT CASES BY MODELSC (D)
PRINT / ID JobSer EDUCSCO ADVPOSCO ASSLOGSC ADVDEGSC
EXECUTE
PRINT / ID PLOSCORE TCSCORE TQUALSCO TSKILLSC
EXECUTE
TEMPORARY
SELECT IF (MODELSC GE 77.9)
CONDESCRIPTIVE Commun ComSen Init Integ Ldr Mgt Dedic OthQ
  Analyt JobKno PlanAb ProbSo Resour StfWk OthS
TEMPORARY
SELECT IF (MODELSC GE 77.9)
CONDESCRIPTIVE MODELSC EXPERSCO PROFATSC EDUCSCO
  MOBSCO ADVPOSCO ASSLOGSC ADVDEGSC PMESCO PCESCO
  PLOSCORE TCSCORE TQUALSCO TSKILLSC
TEMPORARY
SELECT IF (MODELSC GE 77.9)
FREQUENCIES VARIABLES=AcqLog IntLog RetLog ComLog
   WhoLog OpCom MGTSCO STAFFSCO Mobile PME PCE
   PLOmem PLOpart PLOatt TcEng TcMx TcSupp TcSysM
   TcLogP TcTran TcProc LDim LSpGen BachDeg MasDeg
TEMPORARY
SELECT IF (MODELSC LE 56.9)
CONDESCRIPTIVE ComSen Commun Dedic Init Integ Ldr Mgt OthQ
  Analyt JobKno PlanAb ProbSo Resour StfWk OthS MODELSC
  EXPERSCO PROFATSC EDUCSCO MOBSCO ADVPOSCO ASSLOGSC
  ADVDEGSC PMESCO PCESCO PLOSCORE TCSCORE TQUALSCO TSKILLSC
TEMPORARY
SELECT IF (MODELSC LE 56.9)
FREQUENCIES VARIABLES=AcqLog IntLog RetLog ComLog WhoLog
   OpCom MGTSCO STAFFSCO Mobile PME PCE PLOmem PLOpart
   PLOatt TcEng TcMx TcSupp TcSysM TcLogP TcTran TcProc
   LDim LSpGen BachDeg MasDeg
FINISH


Set Width=80
Title 'Senior Civilian Logisticians'
FILE HANDLE MODELINF/NAME='MODELINF'
GET FILE=MODELINF
T-TEST GROUPS=LSpGen/VARIABLES=EXPERSCO
COMPUTE MODELM=MODELSC-MOBSCO
COMPUTE EXPERSM=EXPERSCO-MOBSCO
RECODE MOBSCO (0=1) (7.3=2)
T-TEST GROUPS=MOBSCO/VARIABLES=EXPERSM
T-TEST GROUPS=MOBSCO/VARIABLES=MODELM
T-TEST GROUPS=LSpGen/VARIABLES=MODELSC
NPAR TESTS K-W=MODELM BY Mobile (0,5)
```

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```
DO IF ((JobSer GE 300) AND (JobSer LE 1100))
COMPUTE SERIES=JobSer
ELSE IF ((JobSer GE 2003) AND (JobSer LE 2010))
COMPUTE SERIES=2000
ELSE IF ((JobSer GE 1600) AND (JobSer LE 1602))
COMPUTE SERIES=1601
ELSE
COMPUTE SERIES=2100
END IF
NPAR TESTS K-W=MODELSC BY SERIES (301,2100)
NPAR TESTS K-W=EXPERSCO BY SERIES (301,2100)
NPAR TESTS K-W=PROFATSC BY SERIES (301,2100)
NPAR TESTS K-W=EDUCSCO BY SERIES (301,2100)
FINISH


Set Width=80
Title 'Senior Civilian Logisticians'
FILE HANDLE MODELINF/NAME='MODELINF'
GET FILE=MODELINF
COMPUTE MODELM=MODELSC-MOBSCO
COMPUTE EXPERSM=EXPERSCO-MOBSCO
CONDESCRIPTIVE MODELM EXPERSM
RECODE MOBSCO (0=1) (7.3=2)
RECODE LSpGen (1=3) (2=2)
DO IF (MODELM LE 64.1)
COMPUTE CHIMOD=1
ELSE
COMPUTE CHIMOD=2
END IF
DO IF (MODELSC LE 67.3)
COMPUTE CHIMODSG=1
ELSE
COMPUTE CHIMODSG=2
END IF
DO IF (EXPERSM LE 26.1)
COMPUTE CHIEXP=1
ELSE
COMPUTE CHIEXP=2
END IF
CROSSTABS VARIABLES=CHIMOD (1,2) MOBSCO (1,2)/
  TABLES=MOBSCO BY CHIMOD
STATISTICS 1 3
CROSSTABS VARIABLES=CHIMODSG (1,2) LSpGen (2,3)/
  TABLES=LSpGen BY CHIMODSG
STATISTICS 1 3
CROSSTABS VARIABLES=CHIEXP (1,2) MOBSCO (1,2)/
  TABLES=MOBSCO BY CHIEXP
STATISTICS 1 3
FINISH
CONDESCRIPTIVE ASSLOGSC ADVPOSCO EXPERSCO
    ADVDEGSC EDUCSCO
    PLOSCORE TCSCORE TQUALSCO TSKILLSC PROFATSC MODELSC
FINISH
```

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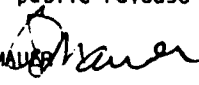
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Thesis Chairman: David E. Lloyd, LtCol, USAF
Assistant Professor of Logistics Management

Approved for public release IAW AFR 190-1.

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This study continues four years of AFIT research on the senior Air Force logistician. The purpose of this study was to develop a weighted model of the qualities, characteristics, and background of the ideal senior Air Force civilian logistician and to compare the population of GM-15 civilian logisticians to that model.

A Delphi survey of 30 expert senior logisticians was used to develop the first normative model of the ideal requirements for the senior civilian logistician. This descriptive model was then weighted by another panel of 44 expert logisticians. A census of GM-15 logisticians was conducted to validate the model and gather data about the qualifications of current senior civilian logisticians. The GM-15s were then evaluated using the weighted model's 100 point scale.

On the average, the GM-15s did not meet the model criteria very well, with scores ranging from 39.6 to 91.1 and a mean score of 67.5. The top twenty GM-15s appear highly qualified based on their model scores.

The products of this research are of value both to those interested in civilian logistician career development and to those interested in the management of logistics systems. The model provides relevant career guidance to civilian logisticians. The empirical data describe 67 percent of the GM-15 population in detail. The comments of a number of expert logisticians are documented and provide valuable insight about the thoughts and opinions of the senior Air Force leadership.